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CO-OPERATION AND INDIAN AGRICULTURE

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PUBLISHERS' NOTE

The importance of Co-operation in the service of Indian Agriculture, such as in financing, in the purchase of agricultural requirements, in the sale of produce, in the carrying out of many agricultural operations, etc., needs no mention. It is with these problems that the author deals elaborately. The author is not only an able and experienced agricultural officer but has also been long connected actively with the co-operative movement and is thus qualified in a somewhat unique manner to write on the subject. In the wealth of material presented and the eminently practical approach to the problems, the book is perhaps the first of its kind.

The Publishers hope that it will prove a valuable guide to all those connected with the co-operative movement.

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BY

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PREFACE

The books and other published literature dealing with the Co-operative Movement in India in its varied aspects are so many and so voluminous already that an addition to their number would seem superfluous or at any rate to need some justification. When it is remembered however that literature of the text-book order dealing with any particular branch of co-operation is not so large after all and that the bulk comprises special studies and reports of numerous committees of inquiries, conferences, discussions and resolutions and reviews of periodical progress both in the States and over the whole country and further that all of them relate principally to the credit or banking side of co-operation, an attempt at a further contribution may appear in a different light and be deemed neither unnecessary nor profitless. The large bulk of co-operative societies in India as is well known comprises credit societies affording financial help to agriculture, industries or other pursuits, the non-credit societies forming hardly 15 per cent. of the total number in the country. The discussions in any conference mainly concern and centre round the various aspects of the credit movement, the imperfections, remedies and improvements. This is no doubt to be expected, as the movement itself was started for affording credit facilities and for the prevention and redemption of rural indebtedness. Credit is certainly the largest need and is of such fundamental importance in rural life and agriculture that it may be even said 'give them the needed credit facilities and the villages will look to the rest,' in the same way as it is sometimes remarked, 'give the ryot both water and manure and he will make as good a job of crop raising as any body can'. Of course these are only partial truths, but they stress how greatly these facilities are needed and yet how difficult it is to secure them. Credit to this day is the chief concern

of the movement and despite the phenomenal development of credit institutions only the fringe of the problem has been touched and many and varied measures are constantly under examination by expert bodies to develop it further. This one-sided development has nevertheless been considered as one of the weaknesses of the movement, in as much as co-operative activities in other fields with a view to utilising the credit facilities in the pursuit of agriculture or other avocations in a profitable manner to increase the income and to reduce the expenditure, which are equally important and should go hand in hand with credit facilities do not receive sufficient attention.

It also happens that in the subject of agricultural co-operation, one has at present to depend to a large extent upon literature relating to foreign countries like Europe and America. They are of course the countries in which the movement not only originated but where they have attained great development, strikingly demonstrating its possibilities in numerous directions. Such literature forms not only the source of inspiration to co-operators all over the world but also the pabulum of their studies. The conditions in India are on the other hand so different that in practice many of the accounts of these great achievements will be found inapplicable in this country. For one thing, the large majority of farmers' co-operative societies in those countries relate to animal products; societies for bacon, eggs, poultry, milk, butter, cheese, frozen meat, etc., will be found to bulk so largely as to be almost the sole type in several countries especially like Denmark or Ireland which are held up as models and which through co-operation have risen from poverty to prosperity. Animal products form such an important part of the people's food there that animal husbandry is of overshadowing importance in agriculture, pastures and grass lands being tended as well as cultivated land, and even of the cultivated area more than one-half being devoted to the raising of cattle feed. Even in respect of the fruits, vegetables and flowers, the production both on the individual

farms and in the aggregate is very large permitting the adoption of efficient large-scale methods of handling and trade. Moreover the proximity of great and wealthy industrial nations with their large purchasing power and the great city populations which have to be fed affords an enormous and profitable market to such products and puts a premium on co-operative effort. The contrast in India with its immense rural population and its petty holdings, not to mention many other well-knwon characteristics, needs hardly to be pointed out.

Officials of the Co-operative Department and members of the general public interested in the movement and who participate as honorary workers and students of the various co-operative training institutes who are, or will be, called upon to organise agricultural co-operative societies for various purposes have to possess considerable knowledge of the scope and nature of these particular lines of activity and of the factors on which their success may depend. Propaganda among our ryots is no easy matter and one has to be fairly well prepared to be able to persuade these experienced and practical farmers conservative and even suspicious in their attitude, to answer their questions and clear their doubts, if one has to carry conviction and secure their support. In India such equipment on the part of officers is particularly important, because the movement is Government-sponsored and societies are nearly always organised by departmental officers; they are constantly watchful as to the directions in which there is scope for beneficial activity, they study and examine the conditions, conduct propaganda, bring the people concerned together, enlist the assistance of technical officers, organise the society and guide and control the work. A poorly equipped or superficially informed man will be easily bowled over by the villager, and any society started in spite of the lack of conviction on their part will be only an imposed one and eventually lapse into the moribund condition of many such which are no more than names in the register. A surprisingly large and creditable record

of successful societies of many kinds, for banking, agriculture, industries, house building and so on, no doubt has been achieved, despite the lack of opportunities for acquiring specialist knowledge, but this only shows how much more could be achieved with the advantage of special study and training. I have had rather close acquaintance with many workers and have always felt that this was a serious handicap to them and that it would add greatly to their efficiency and usefulness, if such handicap should be removed.

As far as agriculture is concerned, the literature available to them is of the kind described above and can be hardly considered as helpful as the circumstances require. I have therefore considered that it will serve a very useful purpose if a popular account could be presented of the various agricultural features, conditions and peculiarities of our country which may be relevant to particular lines of co-operation, and which will have to be carefully studied in deciding the scope for such societies and in planning their working methods. I am aware that conditions may vary a great deal in different regions, but there are many broad features which are common to all and are more or less basic in character and many of the matters referred to in the book will be found applicable over large sections of the country. After all, the outlook of the agricultural population in regard to these forms of co-operation is more or less the same all over the country and the observations based on such a factor regarding the scope or the difficulties to be expected and provided against will be found to have general applicability.

The book covers fairly wide ground and I have attempted to make it more or less a self-contained handbook dealing with co-operation in the financing of agriculture and the origin of the movement, with co-operation in the sale of agricultural requirements or stores, in the purchase and sale of agricultural produce, produce-selling societies for many kinds of products specifically, in agricultural operations like irrigation, tractor cultivation, sugarcane milling, cotton ginning,

etc., and finally in respect of farming itself, as joint farming societies of many types. Much use has of course been made of the voluminous published literature available on these subjects, but I have also largely drawn upon my own experience in the fields of both agriculture and co-operation. I am painfully aware of the great difficulty in bringing our farmers together to undertake co-operatively one or more of the many lines of work described and in keeping them together pulling on harmoniously and successfully. Most villages are split up by factions and parties due to religious and sectarian differences, class distinctions of rich and poor; by petty quarrels, by suspicion of each other and by a too close neighbourliness to be even on speaking terms—all of which may be considered insurmountable obstacles to co-operation. To expect them to co-operate in these many novel directions may be deemed either a total disregard of the conditions or a spirit of optimism bordering on the Utopian. I have been too long and too intimately connected with the Co-operative Movement to ignore or minimise these difficulties. As one of the founders of the very first co-operative society in the Mysore State in 1904, as one who has endeavoured throughout my official career as an Agricultural Officer to graft agricultural activities on to co-operative agency in many directions, as a Director for many years of the Mysore Provincial Co-operative Land Mortgage Bank, as the Founder President of the Mysore Provincial Co-operative Marketing Society and of the Bangalore Dairy Cattle Feed Co-operative Stores, and as a Member of the Government Co-operative Advisory Committee, in Mysore, my opportunities to gauge these difficulties have been many. Moreover in the Mysore State more diversified forms of co-operative societies have been attempted during these forty odd years than perhaps in any other part of India and we have had our due share of both successes and failures, the latter perhaps enough to dishearten many ardent enthusiasts. Nevertheless, I strongly feel that there is scope for all these co-operative enterprises. There is no royal road to success and one has

to be prepared for failures. Conditions however are rapidly changing, we have learnt much from our failures, and both Government and the public continue to evince the same or even greater determination to develop the movement; and if these favourable conditions cannot make one hopeful of success, one must be a cynical and incorrigible pessimist indeed. In any case there can be no excuse for inactivity, for in the memorable words of the Royal Commission on Indian Agriculture: "We have great hopes that many millions of peasant proprietors may be led to a better life through a sound co-operative movement; if this is secured, much else is brought within the bounds of attainment. If co-operation fails, there will fail the best hope of rural India." (*Royal Commission Report.*)

It is sometimes stated that the human material in foreign countries is of a higher order and that is one reason for their great progress as compared with ours; this may be true to some extent perhaps in respect of literacy, if not of education, but I think there is little difference in the fundamental aspect of human nature or character. When many years ago during my travels abroad I was talking to a farmer member of a co-operative society in the island of Jersey about his society, he only aired rather indignantly his grievance against his fellow members who happened to pass on a damaged seed drill which was being used in common by them all, that none had the honesty to own up and that he had to pay for the repairs! That was a bit of revelation for which I was not prepared, but it was nothing more than weak and erring human nature which is thus the same all over the world. There is also the incident narrated about one of the members of a Government managed co-operative farming colony whose answer to a question as to how he had fared as a co-operative colonist was that he had fared exceedingly well and that he was proposing to buy a farm of his own and soon set up as an *independent* farmer. I have mentioned other instances also in the body of the book to illustrate this truth. I mention

these only to show that we need not magnify our difficulties by thinking that we alone are wanting and that elsewhere people are perfect.

The main object of this book is however to present a self-contained account of the ways in which the Co-operative Movement can be harnessed to the needs of our agriculture, to follow in fact the directive issued as long ago as the year 1914 by the Government of India in their resolution of the 17th June 1914 prior to the report of the famous Maclagan Committee, *viz.*, "In no direction is co-operation more full of promise in India than in the improvement of agriculture" and to expand and develop the idea in its practical application to many forms of co-operative effort in agriculture, which appear suitable under present conditions. I have attempted particularly to furnish the necessary background of agricultural features which will decide the scope for these several types of societies and indicate the main considerations affecting their working in practice. As regards the actual organisation or the so-called "mechanics" of these societies, it may be mentioned that the departments of co-operation in every State in India have model bye-laws relating to practically every kind of society dealt with in the book. I have therefore deemed it needless to transcribe or extract them. It must however be remembered that an equally if not more important requirement in the management will relate to the working rules which may be framed as part of or as subsidiary to the bye-laws. I have drawn attention therefore in all the relevant sections, to this type of features in the work for which provision will have to be made in the rules, for ensuring successful working, and which are more or less the result of past experience with these societies, both the failures and the successes. I would fain hope that the attempt has been successful and that the book will meet a real need and prove both useful and interesting not only to those who are connected with the organising and working of these societies but to the general reader as well.

The book is by no means exhaustive, and more than one special line of agricultural improvement suited for co-operative effort may be added, and some of those dealt with may be expanded. The more important ones are however included and dealt with in their main features. It is possible however that the need will arise not only for such expansion but also for additions and modifications, especially in respect of the newer types of societies like Co-operative Farming Societies, as more experience is gained. I also feel that errors and inaccuracies may have crept in here and there, in spite of the care taken, in the present treatment itself. I can only look to a future edition of the book, if one should be called for, to improve it in both these respects; for the present I content myself by craving the indulgence of the reader.

I have derived help from many sources in writing the book and these have been referred to in the appropriate places in the text; I would however take this opportunity of gratefully acknowledging my indebtedness to them all. I must particularly mention the name of my friend Sri. N. Krishna Iyengar, B.A., Inamdar of Ooragahalli Estate, Bangalore, who owns one of the best managed farms in Mysore on which the fullest extent of mechanisation possible under present conditions has been effected, and to whom I owe a special debt of gratitude.

I would also express my grateful thanks to the various officers who have been good enough to supply me with the photographs and blocks for the illustrations which appear in the book.

The Bangalore Press has shown very commendable zeal by printing the book in almost record time and I am glad to express my thankfulness to the Superintendent Sri. G. Srinivasa Rao for the promptness of the execution and the excellence of the get-up.

THE AUTHOR.

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CHAPTER I

GENERAL FEATURES OF CO-OPERATIVE SOCIETIES

The term 'Co-operation' which literally means a 'working together' is applied in a somewhat technical and limited sense to a particular method of such combined working, *viz.*, where the members of a community or society combine for the purpose of rendering to themselves such services as were rendered to them by an individual, corporation or company. These latter agencies are capitalists whose primary concern is the earning of profits, to which end not only are the services charged for as high as possible but all other measures are adopted which will promote this aim exclusively. If it is banking or money lending, then the money may be lent out at exorbitant rates of interest and under harsh conditions; if it is the sale of consumers' goods of all kinds including food and clothing, the prices may be high, the articles may not always be of good quality nor even correct in measure or weight sometimes; likewise the selling of produce for farmers may be on terms hardly fair to them, and other services of various kinds also may be charged for at too high rates. The motive is one of profit-making and although the high profits earned are contributed solely by the community served, the latter does not share to any extent in these profits, which accrue to and are enjoyed solely by the agency rendering the service, *viz.*, the bank or moneylender, the shopkeeper or large merchant, or professional operators of various kinds. It is obvious that if by any other method the recipients of the services can themselves carry on the business and in fact substitute themselves for the capitalistic individual or agency, then they benefit themselves by cheapening the services, improving their quality and various other ways in addition to diverting to themselves such profit as may accrue though

profit-seeking is not the motive. Such a method is provided by organised co-operation and the need, scope and incentive will be in direct proportion to the extent to which the community is exploited in the interest of the profit-seeking capitalistic agency. The higher the cost of the services rendered, the more unsatisfactory their quality or the more exacting and callous the methods employed, the greater is the incentive to combine and resort to the co-operative system; and as in practice these features are inseparable from a capitalistic method, in spite of mitigations dictated by self-interest or imposed by law, there is always room for the substitution of a co-operative agency instead. Bad as they are, these features may be said to possess the doubtful virtue of furnishing the incentive without which the society which is to take its place may lack natural strength and need some measure of artificial help.

While this substitution of the capitalistic agency by a co-operative agency is the commonest and most important form of co-operative effort and while the diversion of profits from the capitalist to the members who actually contribute to its production and who are most entitled to it, the cheapening of goods and services, and the sense of independent self-help engendered form the fundamental distinction between the two methods, there are other forms of co-operative effort which are equally important in which the motive is to secure several other advantages favourable to members. These relate principally to agriculture and rural pursuits mainly, and will be dealt with in detail later on. They comprise operations in which members combine or co-operate, because these operations are impossible of being carried out by single individuals in time, or can be carried out at less cost and more expeditiously by machinery which will be beyond the means of individuals but can be owned and used co-operatively, or will result in a large increase in the quantity of produce available for sale through a system of pooling in which members co-operate, saving both time and labour in marketing besides earning a better price for such produce.

The principle here is one of combination as distinguished from the highly individualistic "each man for himself" idea, the combination being found in its total result more beneficial to the community and therefore to each one comprising it than if each strove for himself independently of the others. Such a combination moreover, greatly adds to the strength, confidence and power of the whole community out of all proportion to the total value of the individual units when each is exercised singly. The principle is an illustration of the familiar proverb "Union is strength" and though apparently intangible it forms the most important asset of most co-operative societies.

Distinctive Working Methods

In the organisation and working of co-operative societies many important features are embodied which serve to keep them strictly distinct from concerns owned and worked by individuals or a company of shareholders and which prevent them from sliding down and approximating to the latter in type. To these we may now draw attention.

1. The co-operative society is confined to *members well known to each other*, such as those living within one village or within a small radius, so that even if they are not well known to each other it is possible to find out easily their status and character. A short radius of a mile or two is often prescribed as the sphere of operations for this purpose. On the other hand, in a company or non-co-operative concern the shareholders may be perfect strangers to each other, living perhaps a hundred or more miles away and are really no more than names in the shareholders' ledger from the point of view of acquaintance with each other or with the management. In a co-operative society the reliability, honesty and good character in general constitute a member's asset and possess the same value as a security which an ordinary moneylender or trader would demand. The co-operative society "substitutes for material assets, honesty and a sense of moral obligation" (Maclagan Committee

Report). The possession of such character by the members has therefore to be well-known or easily ascertainable. In this way the society satisfies itself that the member can be trusted in its transactions with him. In the case of societies for the co-operative carrying out of agricultural operations like irrigation, sugarcane milling, etc., such a specific restriction of the sphere of operations may not be necessary because it is automatically secured, the service being possible only within a limited sphere, but in other cases especially where societies carry on money lending or trading operations, such a restriction will be very necessary. This feature refers however only to primary societies, *i.e.*, societies which have only individuals as members but not to larger ones like Unions or Apex societies whose membership comprises primary societies.

2. A second feature relates to the *restriction of the number of shares* which may be held by any one individual member. Whereas in the case of companies, a shareholder may hold without restriction as many shares as he pleases and can afford to buy, in a co-operative society the number is limited to very few, often to about five as a maximum. This provision has a two-fold object. Firstly, it makes membership and its facilities and privileges available to as many people in the community as possible and not merely to a moneyed few. Secondly, it discourages the craving for and the declaration of large dividends. The restriction of the number of shares that can be held by any member implies only a comparatively small amount earned by the member in the shape of dividends and this small sum seldom makes it worth the while of the member to agitate for a high rate, so that such profits as may be earned become available in a large measure for strengthening the society and for promoting the common good of the members.

3. A society can be started if only ten persons join together, and apply for registration. This very low minimum is a great advantage because firstly the close acquaintance with each other which such membership in a society requires

is more easily secured; secondly, it makes it possible for even a small group of villagers or men with common interests to form a society and obtain the many advantages thereof and thirdly, it take note of the paucity of competent personnel in the villages to conduct a society and therefore does not allow this circumstance to stand in the way of villages securing much needed help. As a matter of fact the minimum prescribed in the first Act was twelve and though this was itself very low it was later reduced to the present number of ten mainly for this very reason.

4. A very important distinction and indeed the most precious feature of a co-operative society is that members have *only one vote each*, whatever may be the number of shares held by them. All members have therefore an equal voice in the management, and no man can gather into his hands an undue share of the power or privilege and dominate over others, promoting his own interests to the detriment of other members or the society itself. The "one man one vote" principle is a truly democratic provision and tends to increase not only a sense of responsibility in each one but also his self-respect, inasmuch as he can feel that in spite of his humbleness he is as important a unit as any of the others however wealthy or high placed in life the latter may be.

5. Another distinction relates to the *apportionment of the profits* earned and the importance attached to a reserve fund. Thus a general provision in nearly all co-operative societies is that fully 25 per cent. of the profits should be set apart and credited to the reserve fund and only the remaining 75 per cent. be made available for apportionment in other ways. The proportion may sometimes be lower or higher but a definite and fixed portion is always a feature. This feature is also in marked contrast with the practice of non-co-operative concerns, in which the provision for reserve funds takes only the last place comprising only such portion, if any at all, as may remain after the profits and other items have been provided for. The reserve fund moreover is never merged

or ploughed back into the working capital of the society but is to be invested separately and safely, so that it is kept sacredly apart. Reserves are also to be kept intact and cannot be drawn upon and utilised for any purpose by the societies, even if all the members agree, without the permission of the Registrar of Co-operative Societies. This additional requirement safeguards the fund against reduction by hasty or ill-considered action on the part of members, however *bonafide* and well meant it may be. In the result, it will be found that the best co-operative societies may possess very substantial reserve funds in the shape of cash, buildings or other gilt-edged asset, while they may be declaring only a low rate of dividend, a feature in contrast with ordinary companies where the existence of a large reserve usually goes with a high rate of dividends.

6. *Limited dividends.*—The rate of dividends is itself limited nowadays and a somewhat low rate of 6 per cent. is fixed under the orders of the Registrar, which cannot be exceeded however much the general body of members may desire to do so, impelled thereto by the all too common human failing in this respect. Many a society in the past could not resist the clamour on the part of its members and declared very high dividends, much of which only accrued in the accounts, and thereby weakened the societies seriously. This was the kind of failing which had to be corrected by official action which ordinarily would have been resented as too much interference. In any case the restriction of the dividend is a characteristic feature of co-operative societies, although in recent years restriction has been imposed by law on company dividends also, wiping out to that extent this distinction.

7. *Rebates to members.*—A portion of the profits is also set apart in many cases for distribution among the members in the shape of a rebate, at a rate based upon the value of the transactions which the member has had with the society in the year and therefore on the extent to which he has contributed to the profits. A member owning perhaps only one

share but doing a large business with the society may earn more in the shape of this rebate than he does in the shape of dividends on his single share, or more than a large shareholder may earn, who however, does very little business with the society. This procedure places a premium on the extent of co-operation and loyalty on the part of a member rather than upon the size of his holding, and it is on these virtues that the success of a society ultimately depends. The term "patronage dividend" sometimes applied to this payment is perhaps more descriptive of its character.

8. *Common good fund.*—Lastly, a part of the profits is set apart as what is called a "common good fund", a feature which emphasises the family-like pattern of a co-operative society. Out of this fund assistance to the extent possible is rendered to a member or member's family in distress, among other deserving objects. This is somewhat similar to what is done in certain trade guilds or caste organisations, especially of artisans and craftsmen. where a member is helped out of a temporary misfortune and placed once again on his legs.

It will be seen that all these distinguishing features are calculated to discourage the profit-making motive and to stress the idea of mutual help. Any intention to exploit its members, to resort to practices like adulteration, false weights and measures, etc., or to gain a little here and a little there at their expense is quite foreign to these societies. The tabooing of the profit-making motive also puts them on a higher moral plane, as welfare organisations, seeing that in this world the craving for profits is the root of all the greed, selfishness, exploitation of the weak by the strong, wars and all the divers forms of suffering among the nations. The idea of mutual help adds to their material value inasmuch as societies enable their members to obtain money, goods or services cheaper and better in quality, and to carry out the operations pertaining to their trade or occupation with greater economy in time, money and labour, and also to help an unfortunate comrade in times of dire need.

LIMITED AND UNLIMITED LIABILITY IN SOCIETIES

Unlimited Liability type.—An important point in the constitution of these societies relates to the extent of the liability of the members. There are two types based upon this feature, one being called the 'unlimited' and the other 'limited' liability society. In the first or unlimited type, each member becomes responsible for the debts or liability incurred by the society as a whole and in the event of the failure of the society owing to the default or failure of debtor-members to repaying their debts, or other causes, then the assets and properties of the other members may be proceeded against for the realisation of the debts of the society. It is no doubt very hard and almost iniquitous on the members who may not have borrowed anything or who may have discharged in full any debts owed by them, to be held responsible for the debts incurred by a defaulting member or members. As a matter of fact, in the early days when co-operative societies were mostly (if not all) of the 'unlimited' type and when many of the debtor-members defaulted and societies had to be liquidated, the others were painfully awakened to the fact that they were responsible, a matter which they had not understood when they were induced to join the societies. Much hardship and bitterness was caused and the movement naturally suffered a set-back and no one would have anything to do with a co-operative society on the principle 'once bitten twice shy'. It is no wonder that the idea of "unlimited liability" does not appeal to many, or as remarked by one writer, "The idea is strange and alarming to most Englishmen." (*Agricultural Co-operation in Great Britain*, by Margaret Digby, p. 92.)

It must be noted nevertheless that the 'unlimited' type has many good features, as distinguished from the 'limited' type. Firstly, it is able to obtain from central banks or other lending agencies very much larger loans, because the security offered is also very much larger as it comprises the total value of the assets of all the members, both rich and poor. Secondly, it implies greater scrutiny and caution in

the issue of loans to its members, a greater effort in seeing that the loan is repaid punctually, the exercise of a certain amount of moral pressure on the debtor-member and on the whole a greater sense of responsibility on the part of the management and of individual members. It implies also a greater degree of mutual knowledge of their character, needs and repaying capacity, of friendliness and mutual help and a fear of loss of self-respect and social prestige, all of which act as a deterrant against default. It really connotes a spirit of true co-operation based more upon mutual trust than upon rigid cold business principles. Such societies obviously cannot have a wide sphere of operations but will have to be confined to the limits of a group of nearby villages (see also pages 18, 19).

Limited liability type.—In the second type, *viz.*, the ‘limited’ liability society, the liability of each member in the event of failure or liquidation, is limited to the amount of the face value of the shares held by him, and he cannot be called upon to pay anything more, whatever the total liability may amount to. The member is thus protected, so to speak, against the default of debtor-members, and to that extent his interest and concern for the welfare of the fellow-members and his sense of responsibility for the safety of the funds of the society, are less, *prima facie*, than is the case in the ‘unlimited’ type of society. A strict business attitude and procedure take the place of the trust and sympathy born of close association of the members with each other. It is in fact a concession to and recognition of the shortcomings of human nature, which unfortunately cannot be ignored in an imperfect world. The ‘unlimited’ liability principle has therefore given place all but entirely to the ‘limited’ liability principle, approximating in this respect to the nature of joint-stock companies and by the same token moving away from strictly co-operative principles.

It must be added that in certain cases even when the liability is limited, there may remain what is called a “reserve

liability ". This will happen in cases where the full value of the share is not called up and a part remains therefore to be paid as and when it should be called. The members' liability is however for the *full amount* of the share and when a failure happens, he will have to pay up the uncalled portion of his share value or 'reserve' liability. Co-operative institutions however seldom resort to this kind of liability, though it is a common feature in many joint-stock concerns.

Co-operation *vis-a-vis* Capitalism

We may close this chapter with a brief reference to the case against the Co-operative Movement, especially in respect of banking and trade or manufacture, made out by those engaged in the latter occupations. In essence the argument is that the earnings or profits from concerns which are run on co-operative lines become too thinly spread and are too little to be appreciated even in the case of members holding the maximum number of shares permitted. On the other hand, in non-co-operative concerns, the profits accumulate in a few hands, if not in a single individual, and that such accumulation of funds is helpful to the community in the starting of further concerns and the growth of capital and that moreover it is out of such funds that large works of public benefaction which wealthy capitalists establish and endow become possible, with all that it means to the general welfare. There is no doubt some force in this argument. The case for co-operation is based however not merely on material considerations but on higher moral and human considerations. Systems based upon profit-making motives always lead to exploitation and the neglect of human values, and, despite all their claims, have succeeded only in landing mankind into an inescapable maze of world struggle and competition, wars and suffering. The Co-operative Movement has admittedly possibilities in the contrary direction and has to be given the chance to grow unimpeded, if not directly fostered by governments and to show what it can do for the good of humanity.

CHAPTER II

CO-OPERATION AND THE FINANCING OF AGRICULTURE

There are many directions in which the co-operative method can be adopted for the benefit of the agricultural classes and for the improvement of agriculture itself as an industry and as the sole occupation of the bulk of the people in this country, and in this and the following chapters we shall deal with the scope for each of these with special reference to Indian Agriculture, and with the organisation and working of co-operative societies for these purposes. The foremost among them is the financing of agriculture or the affording credit facilities for meeting the needs of the agriculturist. Indeed, it was for this very purpose of affording credit facilities to the agriculturist and remedying rural indebtedness thereby that the co-operative society movement was launched in this country. As distinguished from trade, manufacture, mining, transport and similar industries or occupations, there are many features which are special to agriculture and which therefore necessitate special methods of financing it. These characteristics of agriculture exist all over the world, but, in India, they are of much greater importance, and may be dealt with briefly.

1. *Some special features of Indian agriculture.*—The returns from agriculture are dependent upon factors which are beyond the control of man, *viz.*, natural conditions like the climate and weather, and which may aid, or hinder and neutralise human efforts. Lack of sufficient rainfall, too much rainfall or too untimely rainfall, high winds, frost and hail, plant pests and diseases, are all unfavourable factors which have to be reckoned with even in the best years and which account for the gap between expectation and actual realisation and which are responsible

for the uncertainties in the returns from agriculture, which is probably its most characteristic feature.

2. The returns from agriculture take a long time to accrue, because a period of at least one season, which may vary from six months to a year, has to intervene before a return in the shape of crop can be obtained. There is no means by which such a process can be speeded up and the period reduced. In the case of a manufacturing, trading, transport or other concern, on the other hand, the returns are continuous, often even night and day, and accrue as long as men and machinery continue to work, but in agriculture returns can be expected only once a year and after the lapse of one crop season from the time the operations began and the money was invested. If the money had been borrowed, neither interest nor principal can be paid even in part until the end of this period, and a long-term loan is essential even in regard to working capital. Another result of this feature is the fact that prices of the products may drop considerably from what they were when the crop was sown and the working capital invested; the profit on the expectation of which the money was borrowed may therefore largely dwindle or even turn into a loss. Such cases are by no means uncommon. Under such circumstances the borrowed capital cannot be repaid at all and has only got to accumulate with the addition of interest, seriously handicapping further efforts and making it a charge upon the next crop.

3. The agricultural holdings in India are exceedingly small and the returns from individual holdings even under the best circumstances will be barely enough to maintain the average agriculturist's family on just subsistence level furnishing the simplest and most indispensable needs of life. Any circumstance which necessitates exceeding this limit, either stray ones like marriages, funerals or the loss of bullocks and so on or the day-to-day ones like the education of children will lead only to borrowing. It will need all his thrift and the strictest economy and self-denial to avoid

such borrowing; very seldom is a family therefore without a debt. It may be said without exaggeration that the average agriculturist and his family earn on their holdings hardly more than labourer's wages.

4. Above all there is the inevitable need for borrowing for the needs of the crop season, such as seed, manure, labour charges, and may be, even bullock feed. Even seeds may have to be bought, cereal grains sometimes, and others like potatoes, ginger, sugarcane, onions, etc., invariably. Costly items of equipment like carts and bullocks, or land improvement like levelling, bunding and so on, or the very expensive special cultivation in arecanut gardens, will need finance at somewhat longer intervals. All in all therefore the agriculturist's need for borrowing is manifold and never ceases which is a serious state of affairs crying for effective remedy.

Sources of Credit

1. The private moneylender has been and continues to be the most important agency for meeting the credit needs of the agriculturist for all the purposes indicated above, both short-term and long-term, but as is well known his methods are such that they are admirably designed to keep the borrower perpetually indebted. The only way of redemption in many cases is the extreme one of the agriculturist selling out his land, ceasing to be an owner and sinking down to the level of a tenant or labourer, a step which the more grasping of creditors are only too ready to bring about. There are also others who are not professional moneylenders but wish to invest money made in other walks of life in land, and who help in this process cf the land passing into the hands of non-agriculturists. Such a process has long been a matter of grave concern to governments, as it has given rise to absentee-landlordism and the impoverishment of agriculture.

In the past much agrarian legislation of many kinds has been enacted in many parts of India, in order to arrest this dangerous tendency, without at the same time reducing

the credit facilities available from moneylenders. Usurious Loan Act, Agriculturists' Relief Act (Deccan), Money Lenders' Acts, Debt Conciliation Acts and similar ones regulated the moneylender's methods in the interest of the borrower, while Agricultural Land Alienation Acts prevented the passing of lands out of the hands of agriculturists and tried to cut at the root of the incentive to usurious and harsh loan transactions. Alongside such regulation of private moneylending other and supplementary sources of credit have received attention, because the village moneylender is too strong and deep rooted in the economy of the villager and affords credit to an extent which in the aggregate is enormous and much too large to be replaced by any other kind of agency. These supplementary agencies comprise firstly, the Government itself through direct loans to individuals, through private banks aided by Government funds or by a government guarantee for the repayment of principal and interest, and secondly, the agency of co-operative credit societies. Before taking up the last, the others may be briefly dealt with.

2. *Taccavi.*—The direct government loan is the well-known '*taccavi*'. This is a very old practice dating from Moghul times and is really a distress measure in origin, designed to meet the needs of agriculturists for the purchase of seeds, bullocks or manure, or for repairing damage, after a famine or other calamity, so that they may be enabled to resume cultivation. It is not a means of financing the normal needs of the agriculturist incidental to the regular cultivation every year. Even though a famine measure in origin, its scope has been greatly widened by Land Improvement Acts, and the Agricultural Loans Act under which loans (*taccavi*) are advanced by Government for the purpose generally of land improvement, the digging of wells, erecting embankments, and so on; occasionally it is extended to the purchase of machinery for pumping water for irrigation, sugarcane milling, and similar costly equipment. The amounts set apart for the purpose of such loans are generally dispro-

portionately small and the administration of the loan is also defective. Inordinate delays are proverbial, despite strict and frequent orders against their occurrence. Sanctioning officers are very chary of taking up the responsibility of certifying the adequacy of the security offered, and even when sanctioned the full amount seldom reaches the hand of the borrower. These causes detract greatly from even the very small help the system is capable of affording. As a helpful source of credit, it may be almost ignored.

3. *State-aided Banks—Egyptian Land Bank.*—The next method is through the agency of large banks, with help from the governments. The help is usually a guarantee that Government will be responsible for the repayment of both principal and interest, in the event of default by the borrowers or other causes. At one time prior to the advent of the Co-operative Movement, this method of helping agriculturists to obtain credit was somewhat of a favourite and was much advocated by a certain section of administrators, and in fact it was adopted in practice under the name of Land Banks in Egypt where the condition of the agriculturist (fellaheen) is very similar to that of his Indian counterpart, the ryot.

" The Land Bank of Egypt advanced loans of two kinds to small farmers, *viz.*, (1) a short-term loan for periods not exceeding 15 months, which did not require any mortgage security and (2) a long-term loan for periods not exceeding $5\frac{1}{2}$ years, which was made against a first mortgage. Interest was limited to a maximum of 9 per cent. and recoveries were to be made along with the Government land tax by the official *sarrafs* (or village accountants). The Government further undertook to provide in any year such sums as might be necessary after meeting all present claims to make up a profit of 3 per cent on the capital, invested..... Failure to repay was widespread and heavy pressure by police and magistracy was exercised in the collection of arrears.... Foreclosure on the mortgage with sale of land was widely adopted against persistent defaulters. Dispossession of land became indeed

so common and serious that legislation for preventing the alienation of land below five feddans had to be passed to protect small farmers." (Extracted from the Report of the Royal Commission on Indian Agriculture.) The Bank therefore failed in its main object of helping the farmer and Government earned the name of a harsh moneylender in addition to incurring heavy losses. For the financiers of course it proved exceedingly profitable; it was a case of philanthropy with 5 per cent. interest. Associated with the name of Lord Cromer the Consul-General of Egypt at the time who sponsored it with the best of intentions, this branch of the Bank's operations languished and came to an inglorious end after some years.

Agricultural Banks in Mysore.—To a Government solicitous about the welfare of its people and who are prepared to go to great lengths in affording help, the idea of direct financial assistance (albeit through a Bank specially created for the purpose) makes a great appeal and a conspicuous example is furnished by the scheme of Agricultural Banks started in Mysore. This was in the year 1894, long before the Co-operative Movement was seriously thought of, but these banks were to be worked on co-operative principles, though with Government assistance, as may be seen from the objects specified, *viz.*, "they were associations of landholders on strictly co-operative principles, not for the purpose of earning any profit divisible among its members but for the purpose of obtaining money by their own united credit and lending it according to the actual requirements of each member to the extent that the others had confidence in him". Though uttered more than half a century ago these words have a surprisingly modern significance and show how very much in advance of the times the Mysore State has been. The agricultural purposes for which money could be lent were fairly comprehensive, and it was also provided that the expenditure of the money for the specified purpose was to be well supervised. The banks were registered under the Companies Act when they were

formed but later on long after the Co-operative Societies Act was passed they were allowed to register themselves under this Act and enjoy the benefits available under it. Government lent a very large sum of money in the aggregate as advance to these banks, which were started all over the State, but unfortunately owing to various reasons, mainly mismanagement, the scheme failed and ended in serious financial loss to Government. Their failure was a sad blow to the cause of State aid in this matter, and for the time being at least the idea of the State directly participating in this measure of affording credit either by means of a guarantee to private banks or by itself undertaking it as a State concern was effectively scotched. It was not killed, however, for it has been revived in recent years and forms the foundation of the Land Mortgage Banks, as we shall see presently.

4. *Co-operative Credit Society method.*—Meanwhile the third method, *viz.*, the agency of co-operative societies, was being studied, especially in view of the fact that in Germany the method was reported to have done immense good. In Madras, the study was entrusted to Sir Frederic Nicholson and the result was his monumental report which may be regarded almost as the Bible for all co-operators.

THE GERMAN MODELS—RAIFFEISEN AND SCHULZE-DELITZSCH BANKS

It may be useful at this stage to describe the special features of the German models which form more or less the parent type of all the co-operative credit societies, although changes have been made from time to time to suit local conditions. These proto-type societies are two in number, one being called the Raiffeisen type and the other the Schulze-Delitzsch type, and each differing rather sharply from the other.

(*a*) *The Raiffeisen Banks.*—The founder, Fr. W. Raiffeisen, a German burgomaster, was deeply interested in the social and economic welfare of the small agriculturists. He traced the great distress which prevailed amongst them especially in the years 1846–47, to their difficulty in getting

cheap credit and chronic indebtedness to harsh money-lenders. "They were deep in debt to local merchants who charged a concealed interest at anything up to 40 or 50 per cent. on the trading credit given, and expected not only to sell the farmer his requirements at the highest price but to buy his crop at the lowest price, all or most of it being used to settle the debt and the interest on it. 'It is not surprising that the German invented the term 'debt slavery' to describe this system', is one description of the condition which existed at the time." (*Agricultural Co-operation in Great Britain*, by Margaret Digby, p. 92.) Raiffeisen accordingly conceived the idea of opening a co-operative bank which would meet their requirements and conditions. The bank had as its members or shareholders the residents of a single village where everyone was well known to everyone else. The share amount was a small nominal sum. Members comprised both the rich and poor. The liability was unlimited, so that the large assets of the rich together with that of the others jointly and severally formed a security large enough for all their purposes. Working capital was derived from savings and deposits from members and by borrowing from banks. Loans were advanced to members on their personal security, sometimes on the additional security of one or more among them. Loans were advanced for all productive agricultural purposes including land improvement, but in each case not only was the purpose well scrutinised but members saw to it that the sum was utilised for that purpose alone and also efficiently. Loans were advanced only to members and were both for short term and long terms, extending to even ten years. The rate of interest was very low, this indeed being one of its main aims. No dividends were paid and all profits went to the reserve. No directors were paid and expenses were kept very low, which enabled the bank to lend at low rates of interest. The bank was mainly an association of neighbours, designed to help the poor and to protect them as independent landholders, though small.

(*b*) *The Schulze-Delitzsch Bank.*—Founded by a judge of that name, this type of co-operative bank differs in many respects from the Raiffeisen type. The membership covers a wide field and is not confined to a small village presupposing close acquaintance with each other. Members were generally small craftsmen in the towns, so that the bank was more urban than rural. The share value was very high going up to even £ 50, but the amount was to be paid in very small instalments of small trifling sums, thereby committing the member to a long course of saving. Each one is allotted only one share. The liability was unlimited as in the case of the Raiffeisen type. With the guarantee of this large nominal capital, and of the unlimited liability it was possible to borrow from banks very large amounts for lending. Loans were advanced only to members, but for any purpose, and up to any amount, provided the security was sufficient. The period of repayment was however very short, being only three months, although it was renewable. It thus served the needs of the craftsmen who have generally a quick turnover. It was thus a short-term loan bank. Rates of interest were high, quite 12 and 14 per cent. in the beginning. The directorate and management were well paid, and good supervision was thus ensured. Dividends also were at high rates, which at one time is said to have reached 30 per cent. Though they thus appear more like joint-stock companies, they afforded great relief to the type of men concerned, who were not required to subscribe any large share capital beyond the guarantee of a large sum payable in very small instalments; this was easy and possible out of savings, a feature which acted as an incentive to thrift. Still, as it has been aptly observed, there is an element of commercialism in this type as against the altruism characteristic of the first type. It is rather noteworthy that both these types of banks were started about the same time, *viz.*, 1849 and 1850, both of them using the co-operative principle for the relief of the poor among producers, whether rural or urban.

THE CO-OPERATIVE CREDIT SOCIETIES ACTS

The idea of co-operative banks recommended in this famous Nicholson report was eagerly welcomed, a highly optimistic view was taken of its possibilities and co-operative credit societies were deemed the ideal method of helping the agriculturist. The necessary legislation, *viz.*, the Co-operative Credit Societies Act of 1904 was then passed. The stage having been thus set for the starting of these societies, a rapid multiplication of their number followed. Later and revised legislation (1912) widened their scope and embodied changes as the result of experience. Despite defects, some of them even serious, the subsequent history has been one of expansion by leaps and bounds, the stimulus of Government support and unbridled enthusiasm being its outstanding characteristics. Cases of mismanagement, failures and even frauds and other serious drawbacks were many during the subsequent years and at frequent intervals, the movement has had to be reviewed, closely examined and to be improved in many ways. Several committees and conferences have sat and deliberated from time to time towards this end, as the result of which many shortcomings have been removed and improvements have been effected. These have however related mainly to closing loopholes and tightening control in administration, into which it is needless to go. We may now briefly refer to the provisions of the two initial Acts of 1904 and 1912.

The main points provided for were: (1) Any ten persons living in the same village or town may be registered as a co-operative society for the encouragement of thrift and self-help among members; (2) The main objects of the society shall be the raising of funds by deposits and loans, for the purpose of lending to members, that is to say, purely for giving financial assistance to members as *credit societies*; (3) The appointment of a Registrar of Co-operative Societies to be in charge of the organisation and control of these co-operative credit societies; (4) There will be rural societies, which will have four-fifths of their

members agriculturists and urban credit societies in which four-fifths will be non-agriculturists. The liability of the rural societies was to be *unlimited* while that of urban societies *either unlimited or limited.* Other provisions related to the limitation of the number of shares by members, the auditing of the societies' accounts by the Registrar, provision for reserve fund, exemption from various fees payable under the Stamp, Registration and other Acts as detailed below under " concessions ".

In the year 1912 some of the deficiencies of the Act of 1904 were removed and under its provisions, societies of other kinds than mere credit could be registered under the Co-operative Societies Act, and notably the various central banking institutions which were formed for advancing loans to co-operative societies; the liability of the central institutions was limited; and some additional concessions such as items 5 and 6 in the list, were included.

The Mysore Act.—It is interesting to note that in the Mysore Act of 1905, which followed soon after, the scope of the societies was greatly widened so as to comprise many other objects in addition to credit which alone was provided in the Indian Act, a change which the India Government introduced only long afterwards in their revised Act of 1912. Thus the objects specified in the Mysore Act were: the furtherance of thrift; the attraction of capital and the grant of credit to members; the supply to members of raw material, seed or manure; the sale on behalf of members of agricultural produce or manufactured goods; the manufacture of goods and the growing of produce by members co-operatively; the purchase of foodstuffs, clothing, or articles of consumption or of animals, implements and other stock required in agriculture or industry and their retail sale to members; the purchase of machinery and its use in common by members; the building of houses or purchase of lands for members; the carrying out or development, by joint action, of improvements whether agricultural or industrial, and lastly (as if the list was not comprehensive enough) the

blanket provision "any other object calculated to promote the economic benefit of the members, which may be approved by Government by special order in each case".

The following important concessions were also granted to co-operative societies:—

Concessions Granted to Co-operative Societies by Government

The societies have been granted several concessions, which constitute very valuable aids; these are: (1) exemption from stamp duty on all instruments executed by any officer or member of the society and relating to the business of the society; (2) exemption from the payment of registration fee, search fee, fee for granting copies, etc., fee for entering names in the special Notice Register under the Land Revenue rules; (3) withdrawing deposits from Government Savings Banks not more than once a week; (4) transferring funds at par by means of remittance transfer receipts; (5) the shares or interest of members in co-operative societies are not liable to attachment by decree in a civil court; (6) societies have a prior claim over other creditors in enforcing recovery of their dues, which form a first charge, in certain cases. In Mysore, in addition, Government loans could be advanced to societies upto Rs. 2,000 (not exceeding five times the paid-up capital) interest free for two years, and at 5 per cent. thereafter, the loan to be repaid in not more than three annual instalments, beginning from the third year. Over and above these initial concessions, Government help in many forms have been and continue to be liberally rendered both in Mysore and in the other States, emphasising more and more the fact that the movement has not only been started by Government but supported by it in many ways.

Limitations of Credit Societies

These co-operative credit societies that have been started in such large numbers and are still increasing in number, afford credit to agriculturists for small seasonal

needs for short periods and on the personal security of the member mainly. The amount that can be lent is limited by these conditions and is necessarily small. The agriculturist's needs are however not mainly for agriculture but are more often for extra-agricultural purposes, such as marriages and other celebrations, or other domestic needs. Larger amounts are needed which for that very reason cannot be secured except on adequate security like land or other asset, nor are they capable of being repaid except over a long period. As rural credit societies cannot help him in this matter, he has perforce to resort to the moneylender again, and eventually goes to him for small loans also and virtually transfers his dealings from the society to the latter, thus reverting to the very system from which the movement was intended to wean him. Necessary changes were therefore made in the constitution of the societies, enabling them to grant loans for longer periods, in larger amounts, and on the security of assets like houses, jewelry, etc., and on the personal security of more members and so on. Agricultural land as security was not excluded everywhere, but even where it was permitted, it was on a restricted and much qualified scale. Provision was also made for placing more funds at the disposal of societies by the creation of Unions, Central Banks, Apex Banks and Provincial Banks from which societies affiliated as members or shareholders can borrow and thus finance individual agriculturists in their needs to a larger extent more adequately. This step greatly enhanced the usefulness of the credit societies, removed one of the main obstacles in the way of their expansion and ensured to them a larger number of members who would continue their connection permanently and not look upon them as temporary sources of credit which they could tap in addition to the permanent source, the moneylender. Provided repayments were made punctually when they fell due and all members faithfully honoured their commitments, there was no difficulty in obtaining sufficient loans from the central institutions and thereby helping members in their need efficiently. In fact,

it is these central institutions which form the main prop and pillar of co-operative societies of all kinds, both credit and non-credit in the all-important matter of providing them with funds and enabling them to function.

THE LAND MORTGAGE BANKS

Nevertheless the exclusion of land as a security well recognised by all societies acted as a serious handicap, and this circumstance could always be pointed to as tending to retain the moneylender's hold on the agriculturist. Moreover it was found that although the primary societies certainly afforded much relief and succeeded to some extent in preventing resort to the moneylender, still the burden of debt was so heavy that little or no impression was made on it and the problem remained as acute as ever. One of the main reasons was that the bulk of these debts were very old and had remained unpaid owing to the lack of sufficient income from the land or other inexorable demand upon such income. There were other reasons too into which it is needless to go here. The point to note is that the heavy burden of accumulated debt and the yearly accretion of interest severely crippled the agriculturist and acted as a potent cause for the passing of his land to his creditor, or in other words the problem of agricultural indebtedness remained unsolved.

The situation was met by the opening of Co-operative Land Mortgage Banks. These Banks were to advance loans on the security of landed property to be mortgaged to the Bank, which were made repayable by means of equated annual payments extinguishing both principal and interest in the course of 15 to 20 years. The purpose of the loan has been confined to the discharge of what are called prior debts, *i.e.*, debts of long standing, and the release of mortgaged land for which there was no hope of redemption, without the proposed help. In many cases the grant of the loan was linked up with the awards of Debt Conciliation Boards, which were constituted here and there and which could

whittle down these accumulated debts bloated by unpaid interests, to reasonable sums, taking into consideration the rates of interest charged, amounts paid back either as simple or as compound interest and so on. The amount of the award was to be taken by the creditor in full discharge of the debt, provided it was paid immediately. This payment was made by the Land Mortgage Bank, either in whole or in part (generally the former), on the security of the released land or with other additional property, if necessary. The funds necessary for such financing by the bank were raised by means of long-term debenture loans from the public which were guaranteed by Government, so that the old system of the support or participation of Government was revived again. These banks have become very popular and are rendering useful service, redeeming many indebted families from virtual bankruptcy.

The banks are not however without their imperfections or limitations. Among them is the inordinate delay in the disposal of loan applications, a circumstance necessitated by the rather prolonged scrutiny of the title to the property and other formalities, some at least of which appear unavoidable. As the Central Land Mortgage Banks lend money through an intermediary or primary institution called a Taluk Land Mortgage Society analogous to a primary credit society as related to the Central or Apex Bank, this necessitates a higher rate of interest than might otherwise be the case. It may even happen that with first class security a moneylender may be willing to advance the loan at the same rate of interest and even perhaps lower in exceptional cases. It must however be stated to the great credit of the Land Mortgage Bank of Madras that the interest charged to the ultimate borrower is only $5\frac{1}{4}$ per cent., which is probably the lowest rate in India. The loans moreover are limited to the discharge of 'prior' or old longstanding debts. Though this may not be interpreted too strictly to exclude recent debts, still it can prove a handicap, where the directorate is not lenient. Moreover, the lands once mortgaged to

the Bank are not available for a second mortgage, except in very special circumstances and with great difficulty. When the debtor wishes to raise, a second loan to meet unavoidable expenditure and has no other land to offer as security, this works as a great hardship, and in case there has been any large increase in land values subsequent to the first mortgage, it even appears inequitable.

Lastly, the bank cannot lend money for purposes of land improvement, the digging of wells and installing pumps and engines, starting gardens of cocoanuts, mangoes, etc., wire-fencing, and so on, which are all capable directly of increasing the income from the land and cutting at the root of the debt problem. However, improvements in all these directions are steadily being effected and in some states provision has been made for including land improvement among the purposes for which loans can be granted.

Although Land Mortgage Banks in India have been started for helping agriculturists to liquidate prior debts and although they have been functioning only as such, they should be considered ideal institutions for the financing of agriculture almost in its entirety with the exception of providing short-term or seasonal credit. The reasons are: (1) Their working capital is derived from long-term debenture loans of 20 or more years, unlike the ordinary banks and can be therefore used for issuing long-term loans for the redemption of old debts, the buying of land, the effecting of permanent improvements, the purchase of irrigation or other machinery and so on. (2) These loans can for the same reasons be made repayable over a long period of 15 or 20 years, in small annual or semi-annual equated payments, in amounts which practically mean the actual profits from farming the land concerned, and are therefore by no means burdensome. (3) If occasion arises, loan instalments can be paid even in advance and all extra earnings can thereby be made use of for extinguishing the debt; though this works as a disadvantage to the banks they have methods by which this kind of service can be rendered possible, without difficulty

either to themselves or the borrowers. (4) The debenture loans are guaranteed by Governments, both principal and interest, and hence they are able to borrow at very low rates of interest and in turn are enabled to lend likewise at low rates. The ultimate borrower is charged only 5¼ per cent. in the Madras State, which is the lowest in India; and this example of passing the benefit of a Government guarantee and a low rate of debenture interest on to the ultimate borrower has to be followed by other States also. Nevertheless the rate of 6 per cent. which is the general rate in these latter States is certainly low, and is a great help.

It is very desirable and necessary that Land Mortgage Banks should widen their functions so as to include other forms of agricultural finance also. In fact, the Registrars' Conference of 1926, the Royal Commission on Agriculture, and the Banking Enquiry Commission, all recommended that these banks should grant loans for (*a*) redemption of land and houses of agriculturists, (*b*) improvement of land and methods of cultivation, (*c*) liquidation of prior debts and (*d*) purchase of land in special cases.

The bye-laws of some of these banks provide accordingly for the granting of land improvement loans, and in Bombay and Baroda (now Bombay) some noteworthy progress has also been made. It is worth mentioning in particular that in Bombay loans for this purpose are granted at specially low rates of interest, *viz.*, 3¼ per cent. for well sinking and 5½ per cent. for the bunding of land and purchase of agricultural machinery, although the usual rate is 6 per cent. This is made possible because the Government gives the bank a subsidy, the amount of which is sufficient to cover this difference. This excellent feature is however offset by the fact that the loans so issued do not amount to more than 10 per cent. of the total transactions. In Mysore, rules have recently been framed for the granting of land improvement loans, which it may be hoped will soon be acted upon; meanwhile it may be mentioned that the rather exceptional practice prevails in this bank of granting short-

term loans for cultivation expenses to those who may have already taken a land mortgage loan, whenever the circumstances warrant such grant. Taking the country as a whole, however it must be said that practical action in respect of such a wider sphere, has been either none of all or very hesitant and meagre at best.

This is not a desirable state of affairs and will have to be mended not only in the interests of the agriculturists, to whom this kind of help is very material but also in the interests of the banks themselves. As a field for investment, the prior debts from the very nature of things constitute a rapidly contracting sphere which must eventually quite disappear; in fact the pace of such extinction of these prior debts will be a measure of the success of these banks. To confine operations to this one field is therefore a serious weakness to the Banks and it behoves them to seek betimes a wider and more permanent field. This can be found only in the various forms of agricultural improvement, such as providing irrigation facilities, bunding, levelling, terracing land, fencing, purchase of machinery, establishing gardens of cocoanut, areca or other permanent crops, purchase of land, building or repairing farm houses and so on. It is only in this way that the banks can put their business on a permanent and growing basis, besides at the same time promoting the progress of agriculture, which is admittedly their primary object. (For a full and up-to-date account of the subject, *vide Land Mortgage Banks*, published by the Reserve Bank of India, 1951, from which some of the above facts have been taken.)

Financing of Supreme Importance

It is worth reiterating that the affording of credit or financial help forms the basic function of co-operative organisations. Co-operative societies of all kinds, whether solely for banking or for any of the various agricultural or other purposes have to advance loans to their members as almost their primary function, in order to enable them to carry out the purpose

for which they have been formed, for the purchase of machinery, erection of buildings or for advancing on goods bought or produce to be delivered, or as working capital; they have to borrow for this purpose adequate funds either in lump or at frequent intervals from co-operative banks of various grades which, of course, are themselves credit institutions though operating on a large scale. Among the objects of co-operative societies specifically or as a bye-law authorising the management, this provision for raising funds for the aforesaid purposes will be found to be invariably included. Finance is indeed the life-blood of the societies and unless this is available on a sufficient scale readily and under reasonable conditions, they will have to close and cease to function. Finance is therefore of overshadowing importance and the agencies for affording it have to be vastly developed. It needs hardly to be added that the administration of the funds both by the lending agency and the borrowing societies will have to be so efficient and strictly honest that the capital required will freely flow in, perhaps even diverted thereto from other forms of investment.

The Example of the U.S.A.

How great and varied the needs of agriculture are in respect of financial assistance for which the industry may legitimately look to the State, can be understood by a reference to the many measures adopted in the U.S.A. for rendering help to farmers. Thus, under the general head of Farm Credit Administration there are a number of institutions whose purpose "is to provide a complete and co-ordinated credit system for agriculture by making long-term and short-term credit available to farmers. It also provides credit facilities for farmers' co-operative marketing, purchasing and business service organisations." Each of the twelve districts (into which the State is divided for this purpose) has a Federal Bank, a Production Credit Corporation and a Bank for Co-operatives. From the first kind of institution, long-term loans upon first mortgage of farm lands

are obtainable for the purchase of agricultural land, of equipment, fertilisers and livestock, for improvement of land, for liquidating indebtedness and to provide funds for general agricultural uses on the mortgaged land. The second type affords short-term loans, the amount of each loan depending on the particular operation to be financed, the farmer's ability to use it wisely, and his ability to repay it without danger of impairing the efficiency of the farm. The third type affords the Farmers Co-operatives loans of three kinds, *viz.*, (1) commodity loans at 1·5 per cent. interest, (2) loans for working capital at 2·5 per cent. interest and (3) 'facility' loans at 3·5 per cent.

The Farm Home Administration (in which are merged the unique organisations called Farm Security Administration and the Emergency Crop and Feed Loan Division) affords loans to farmers who cannot get the loan they want from banks, co-operative lending agencies or other responsible sources. The terms are extraordinarily liberal and comprise purposes like (1) buying or improving farms, the amount of the loan being amortised over 40 years at 3·5 per cent. interest; (2) for insuring similar loans if borrowed from private sources; (3) production and subsistence loans for buying livestock, manure, seed, or equipment and for family subsistence. (For details *vide United States Government Manual*, 1947.)

Such vast schemes of financial aid to farmers by the State have perhaps no parallel, and if this should be deemed necessary in a wealthy and highly developed country like the U.S.A., the extent to which India has to be similarly helped may be imagined.

To sum up, the credit needs of the agriculturist are being met, as far as the co-operative agency is concerned by (1) the primary societies of various types which comprise only individuals and lends only to individuals; (2) the Central Banks and the Unions; the former comprise both societies and individuals as members and deal with both, and the latter confine their dealings to societies alone; both operate

CO-OPERATIVE CENTRAL BANKING INSTITUTIONS IN MYSORE

The Mysore Provincial Co-operative Apex Bank Ltd.

The Mysore Central Co-operative Land Mortgage Bank Ltd.

— Photos by courtesy of the Mysore Provincial Co-operative Institute.

within a limited defined district or districts; (3) the Provincial or Apex Bank, which finances societies mainly, though individual loans are not excluded; and (4) the Central Land Mortgage Banks, which finance Primary Co-operative Land Mortgage Societies, which lend exclusively to individuals, the actual loan amount being advanced by the former.

As the crowning agency in this edifice comes the Reserve Bank of India, which is now actively interesting itself in the improvement of agriculture in all its aspects and helping the farmer as the primary producer, and has created a special department for the purpose. Substantial assistance is foreshadowed in many ways, so that practically every operation can be helped with finance, and the farmer rescued from exploitation, through the agency of co-operative societies.

Despite phenomenal development since its inception, the credit societies are not in a position to make any large impression on the indebtedness of the agriculturist or in meeting his needs for finance. It is a truism that little more than the fringe has been affected. Both Government and the public are much exercised in mind over the situation and many ambitious plans, some of them colossal, are adumbrated, especially through the various planning committees of recent years. It is too early to say anything about them beyond this brief mention.

CHAPTER III

CO-OPERATION IN BUYING AND SELLING

OR

STORES OR SUPPLY SOCIETIES

Probably the most difficult form of co-operation from the point of view of practical working relates to buying and selling. A co-operative society formed for this purpose comes immediately into conflict with the trade, which is well organised, powerful, has professional ability in management, being in the hands of men to whom trade is the caste or ancestral occupation. Trading concerns, whether it be a small village store or a large business in a town, are moreover generally under the sole management of single individuals who are also mostly owners, with whom self-interest is a strong driving force as against the joint management of a society, which is every one's business in theory and nobody's in practice. Paradoxical as it may seem, it is in the buying and selling line of business, difficult for co-operative management, that there is all the incentive needed to make the agriculturists combine in co-operation and to make a success of the society.

Societies which may be classed as buying societies are of the nature of what are called Store or Supply Societies (or Consumers' Societies, especially when they refer to urban societies supplying the needs of the general public) and those which may be classed as Selling Societies, are generally referred to as Produce-Selling or Producers' Societies or Marketing Societies. The term Agricultural Marketing is usually applied to the operations of the latter class of societies, *viz.*, Selling Societies. These will be dealt with accordingly in a separate chapter.

Buying Societies or Store Societies and Their General Features

(*a*) *Wholesale purchase and retail sale.*—These societies are formed for the purpose of enabling agriculturists to purchase

all their requirements or such of them as may be possible or advantageous to so purchase, in large lots at wholesale rates and then sell them to their members in small lots at retail rates. These latter rates are practically the same as may prevail in the market or less; in other words, the member pays for the article what he would have to pay in an ordinary trader's shop, if there was no society of the kind. Normally there is considerable difference between the wholesale and retail rates, the wholesale rates being very much lower than the retail rates. This difference which in the trade becomes the profit of the trader, now accrues to the society, which is later passed on to the members themselves after the expenses are met. Thus while the member pays no more for the article than what he will have to pay at a trader's store, he has the further advantage of sharing in the profits, which may be looked upon as a rebate or reduction in the price he pays, though it actually accrues to him only at the end of the year. This advantage is secured because the members' requirements are all previously canvassed or estimated, and the total quantity is bought at wholesale rates which apply to quantities bought in large lots in this way. Sometimes merchants and manufacturers offer to sell their goods on what is called a 'graduated' scale. In this case, the rate of discount allowed varies with the size of the order, an order worth Rs. 1,000 for instance being given a higher rate of discount than one worth only Rs. 500, and one worth Rs. 5,000 being given a still higher rate. Freight charges likewise are more advantageous in the case of large lots like a waggonload, than in the case of smaller lots. So that, the advantage of making large purchases is greatly enhanced in this method. Such a course is possible obviously only if all the members co-operate and undertake to buy their requirements from the society and not merely a few among them. In fact the need for all members being loyal to the society is so important in every type of society that we shall have to refer to it again and again in these pages. As a result therefore, members obtain their requirements at prices

which in the long run work out much lower than in the bazaar, which to a poor family may mean a great deal.

(*b*) *Guarantee in quality and quantity.*—In addition to the advantage in price, there are others equally important and these relate to the quality of the goods and the honesty in dealing. The quality of the goods is generally better than in the bazaar, and certainly they are genuine and unadulterated; the management exercises much scrutiny in the selection of the articles they buy for the society and wilful adulteration is absolutely ruled out. Correct weights and measures are used and there is no attempt at fraud or petty cheating in weighing or measuring which is not uncommon in the bazaar, even when they use only correct weights and measures. These vices are proverbial in the trade and prevail throughout the world, the sophistication being perhaps more ingenious and difficult of detection, the more civilised the country is. Such practices are totally foreign to the character of co-operative stores, and this is certainly a valuable asset. It is an irony of fate that these practices are more common in the petty shops catering to the poor whether in villages or towns, who are the very people who have to be protected against such exactions. Where purchases are made in very small lots much like a daily ration, as is customary with such people, the hardship is particularly felt, and the better quality and lower prices which a co-operative store society offers must therefore be a boon to them. In fact, the urban store societies have had their origin, as we shall relate presently, in the desire to help such humble folk.

(*c*) *Cash sales and thrift.*—A special feature of such societies is that sale to members is on a cash basis. The system benefits both the society and the members; the former has no arrear accounts, no sending of bills, no need for provision against a bad debt and so forth, and for the members it is a check on improvident expenditure and an incentive to saving. It is however argued that societies cannot be considered helpful if they ban credit sales altogether

and that such a step will be driving the members back into the hands of the ordinary tradesman, and that allowing credit sales only demonstrates how the society is based upon mutual trust as a co-operative society is expected to do and so on. This attitude on the part of members is found too strong to be resisted and many societies therefore carry on credit sales also. Such a compromise is to be regretted, because it puts a premium upon improvidence on all except the small number who may have the strength of will to resist the temptation. It is always uphill work to do so and the insistence on cash payment will be no small advantage in helping members up the harder road. To the society itself the credit sales will add to the cost of management, will require a larger working capital or overdraft from banks, will involve bad debts and write-offs, all of them tending to weaken it. The apparent convenience of securing goods on credit may in the long run be found to be too dearly bought.

(*d*) *Handicap of traders' hostility.*—A somewhat serious handicap to such societies is the hostility of the trade which has to be reckoned with. The spirit of the Co-operative Movement is quite opposed to that of trade-competition and profit-making but in addition to this difference in the ideals there is the actual and material loss in custom which the trade incurs by the weaning away of a large number of buyers to the co-operative societies. The more successful the societies, the greater is the volume of such loss. The many concessions which are shown to the societies and especially in the exemption from income-tax, which the trade has to pay in full also cause much bitterness. The trade therefore cannot be expected to look with a kindly eye on the development of these societies, and this makes the management of societies more difficult than it might be. The danger of undercutting prices by the trade in order to wreck a society may have to be faced also and infant societies may find the task by no means easy. It may indeed be doubted if many societies can survive at all, if the trade

should be actively and permanently hostile, because the latter is so well organised and powerful. It is probably in the belief that there is room for all, "that there are as good fish in the sea as ever came out of it", as the saying goes, that the development of these societies is put up with.

On the side of the management much ability is called for, in seeing that they purchase goods of such quality and at such prices that they can be sold at a rate not exceeding the bazaar prices; but in a society which has its rigid set of rules to abide by, the elasticity required in fixing or altering prices as and when necessary cannot be had and this will always remain its weakness as compared with the trader. The all-important prop and pillar on which it will have to rely for its success will have to be found in the loyalty of the members in making all their purchases from the society itself, despite a higher price occasionally on some article or other. This loyalty cannot however be strained too far and it is up to the management to see that the loyalty means a business advantage as well and therefore pays.

Reference may now be made to two very interesting features of the store society movement, *viz.*, (1) its very rapid growth and the great dimensions it has attained in spite of the many handicaps to which we have drawn attention; and (2) the pitifully humble beginnings in which it had its origin. The foremost illustration of the first is furnished by the Scottish Co-operative Wholesale Society, comprising numerous branches and with a volume of business so great that it has its own factories and workshops for manufacturing many of the products it deals in, including even coffee and tea estates abroad. In the U.S.A. in some trades at least the 'co-ops' have developed to such an extent as to be formidable competitors to private trade. The latter is naturally up in arms against the stores and urge that they should be made to pay the income and other taxes to which the trade is subject and from which the stores are exempted, so that the two can compete on equal terms. In India itself the Triplicane Urban Co-operative Stores Society

in Madras City is a striking instance, remarkably virile, and successful, catering to the needs of a large section of the population of the city and having 70 depots and branches all over the city, and a membership of over 17,000 members and annual sales of the value of nearly Rs. 1⅓ crores. (Report for the year ending 31–12–1949.) Very creditable as its record is, its potentiality is even more to be stressed, because it can successfully take up more than one kind of manufacture or at least processing, with results which may benefit the public in many ways.

The "Rochdale Pioneers"

The remarkable progress of the movement may be considered unbelievable if we look at its humble beginnings, *viz.*, from the co-operative stores started by a small band of 28 poor weavers in the industrial town of Rochdale, England, who have since come to be known as the "Rochdale Pioneers". The poverty and distress in which these hard-worked men and women had to live, which appeared to be their permanent and inescapable lot, were such as to drive them to despair. They were perpetually in debt to the local tradesmen, who exploited and fleeced them heartlessly, and from whom there was no means of freeing themselves. They were supplied with the worst quality of articles and at exorbitant prices. Mouldy and worm-eaten wheat, fit only to be thrown away, was bought and milled and sold to these poor people and adulteration of the vilest kind was practised, and short weights and measures were also usual, even at that. Articles were supplied on credit and these could seldom be paid back in full, and the men had to remain in perpetual bondage and put up with their misery. Though many attempts were made by well-meaning leaders to ameliorate their condition they all failed and there appeared to be no hope of redemption. It was this strong incentive which drove the few bold spirits or pioneers to open their own co-operative stores, in a very small way dealing in a few articles and themselves taking turns at running it after work-

ing hours. Success attended their efforts and their subsequent career is one of history.

It may be useful to mention here some of the rules which the pioneers adopted as these have become more or less the models for all societies of the kind, though not bodily in their entirety, but certainly in their spirit. The most important one and the cornerstone of the business was the principle that profits are divided among the members in proportion to the purchases made by them, that is to say, that the profit should go out the same way that they came in. Members joined by paying an entrance fee of a shilling, and signed for a £ 1 share, which made it possible for everyone to join as a member. Business was commenced out of a capital raised by small subscriptions of even 2 or 3 pence each making up a total of £ 28. The full share amount of £ 1 was soon made up out of the profits earned by each member. The profits or dividends on purchases so earned by the member were capitalised till the share rose to £ 5. 'The one man, one vote' principle was adopted; the liability was limited; a member could hold a maximum of £ 200 in the shape of shares. All sales were for cash only. Accounts were made up every quarter, only 5 per cent. was paid as interest on the capital, a bonus was paid to the employees and the surplus thereafter was divided among the members in proportion to the purchases made by them. Such dividends on purchases amounted on the average to 2*sh.* 6*d.* per £1 or over 12 per cent. Of course each member's account was kept separate, so as to ascertain the value of his purchases. The very large saving which members earned and which enabled them to make up a £ 5 share out of their profits alone, by simply transferring all their custom to their society, was the most appreciated feature, not to mention their liberation from the clutches of the creditor tradesman. Though at the start the society confined itself to small retail sale of bread, flour, sugar, soap, candles and the like they soon took up the manufacture of their requirements in the way of flour, bread, clothing, boots, etc. Even from the outset the society was able to provide

for help in education, and facilities for a reading room and library for their members, and these cultural and mutual help activities now form important and general features of all such societies.

Stock-in-Trade of Agricultural Stores Societies

The articles that may comprise the stock-in-trade for such agricultural store societies may comprise either a few such as seeds, manures, especially concentrated ones like oilcakes and chemical fertilisers, cattle feeds, implements, spray materials, etc., or may cover every one of the domestic requirements, including provisions, clothing, etc. In a town or city store society the latter are the type of goods dealt with exclusively but in a rural society catering to the needs of agriculturists, the former kind is dealt with exclusively or with the addition of the latter kind also to a small extent, seeing that rural folk are slowly approximating to town standards. In fact it would add very materially to the usefulness and the day-to-day activity of such a society if they should deal in the latter articles also, rather than only in manures, seeds and implements. In the latter case, there is always the risk that the society ceases to do any business and to go into a sort of coma after the season for the sale of these articles is over, which certainly is not conducive to its healthy life. Moreover there are, at the present time at least, conditions which set a limit to the volume of business that can be done in respect of seeds, manures and similar articles, as will be seen presently and the supplementing of the stock-in-trade with other goods may prove indeed to be a necessity to keep the society functioning.

1. *Manures.*—We may now deal with the scope and other features of the important items in the stock-in-trade. Taking first the case of concentrated manures, it may be stated that the scope is almost unlimited in the country; the need is also supreme, because next to water manure is the most important factor in crop production. The amount of ordinary cattle manure even when supplemented by

composts, green manure, tank silt and the like is hopelessly inadequate to our requirement and the need for the use of concentrated manures is imperative. Although this is the case throughout the country, in tracts where much irrigated cultivation is carried on and valuable food and commercial crops are grown, it will apply with particular force. Fortunately the time is past when our farmers looked with suspicion upon such manures and much demonstration and propaganda were required for popularising them. At present in many parts of the country, their use has become well known and popular and the question is one of ways and means to help the ryot obtain the necessary supply. From what has been said about the advantages of a co-operative business in this respect, it will be seen that such societies will be the most helpful method of supplying them. A rather important feature will be their easy accessibility, as ryots can get them practically at their own door in their village, so to speak, if the village should be at all large enough to justify the opening of such a society. This will be no small advantage, as ryots may otherwise consider it too great a trouble if they should have to go long distances to buy the manure.

The particular manures concerned will be firstly, the oilcakes of groundnut, castor, hongé (*pungam or karanj*), neem, kurdi (*kusube or safflower*) all of which are largely available for manurial purposes, though some like groundnut and kusube cake are good cattle feeds as well; secondly, bonemeal, either raw or steamed, and thirdly, chemical manures, of which the commonly available ones at present are sulphate of ammonia, nitrate of soda, superphosphate of lime, ammophos and sulphate of potash. Others also become available now and again, and may be stocked; these are nitrate of potash, chloride of potash, urea, nitrophaska and others, but all these should be handled only after consulting the Agricultural Department. In addition, manure mixtures are put out by manure companies and by the Agricultural Department and these can be stocked also, but invariably under technical advice.

Although not manures, the seeds of certain important green manure crops like sannhemp, kolingi and dhaincha are worthy of being stocked, which will be a much appreciated feature.

2. *Cattle Feeds.*—The scope which exists for manure may be said to exist perhaps only to a slightly lesser extent for the supply of concentrated cattle feeds like oilcakes of groundnut, gingelly, niger, safflower and cocoanut, cotton-seed, horsegram, etc., if not wheat bran, rice bran and pulse husks as well. The use of these feeds is well known and if they should be made readily and always available in the village society, is bound to increase. As feed for working bullocks, both scope and need exist in every village, while in tracts where milk production is at all important and both cows and buffaloes are kept, these feeds will meet a much needed want and conduce to increased milk production.

3. *Seeds.*—As regards seeds, they come under a different category and at the present time at least, the scope for their supply is not as great as might be. The reasons are firstly, every ryot reserves out of his own produce enough seed for his individual needs, and seed of this kind is seldom bought and sold. It is only when there has been a poor crop and produce is barely sufficient for food purposes, the need arises for purchasing seed grain. Secondly there is no special trade in seed grain and there are no large seed grain suppliers as in foreign countries who specialise in the cultivation of particular varieties, generally high yielding or disease resistant, etc., attend to the special cleaning, drying and storage and sell it at sowing time. To a certain extent their place is taken in this country by the Agricultural Department itself, in respect of the so-called improved varieties. It may be expected that even if the ryot is once supplied either direct or through a society he will reserve seed for himself for the following year and may not resort to the department or the society again unless forced to do so by a bad season. Nevertheless it will be found in practice that in the case of most crops the ryot cannot be depended

upon to raise a crop of improved variety sufficiently pure either in the field or after harvest at threshing time for seed purposes, and that further in the case of a crop like cotton, cannot gin it himself and depends for his seed supply upon bazaar seed although he may have grown the selected improved variety. It is advisable therefore that seed supply should be in the hands of the Department or other special agency which will guatranee both variety and quality, and from whom societies can buy their full requirements for retail sale to their members.

4. *Implements:* (*a*) *For sale.*—In the case of implements the scope is restricted largely or almost exclusively to the so-called improved implements such as the iron ploughs of different sizes, cultivators, shares and other spare parts for these implements, and to a small extent to outfits like sugarcane mills, pans, and other accessories for the making of jaggery, in tracts of sugarcane cultivation and chaff-cutters, especially in Upper India. The improved ploughs and implements are still not in such large general use as to be sold by ordinary traders but are being popularised and sold by the Agricultural Departments. In certain States and particular regions however they have come very largely into use and are articles of large scale manufacture like the Kirloskar ploughs of Bombay, and are stocked for sale by private merchants. A similar state of affairs may be seen in Mysore where these are locally manufactured and have come largely into use. In most cases the supply is in the hands of the Agricultural Department which is generally anxious to popularise them through co-operative societies and offer to such societies substantial inducements. Large-scale manufacturers also welcome the assistance of societies in the same way. It will therefore form a useful line of goods to deal in for societies, both because the implements become more easily accessible and lead to an improvement of the agriculture of the neighbourhood and also because it will be profitable to the societies and eventually to the members.

(*b*) *For hire.*—While these implements are kept only for sale, it may be helpful to some of the members if a few are kept for hire also. This will be greatly appreciated by smaller ryots, who may not afford to purchase one outright but would still like to use it for a day or two for ordinary ploughing or special work like deep ploughing for the destruction of weeds or for the cultivation of special crops like sugarcane. To some extent this step may interfere with the sale of these ploughs or other implements, but it will be very useful to certain members which, after all, is one of the main objects of co-operation.

In the case of sugarcane mills and jaggery boiling appliances, such as pans, cooling troughs, wooden moulds, etc., the outfits will generally be for the sake of hiring out, and it will be found that the scope for such a purpose is more than for outright sale. Societies which go in for the stocking of outfits for hire will be taking the place of the ordinary trader or sahukar in the village who makes a business of hiring out such sets and usually finds it quite a profitable one. If the society should charge the same hire as the trader does, *i.e.*, if the member pays no more to the society as hire than he would pay to the trader, then it will be found that in the course of two or three busy seasons, the whole of the cost of the outfit will be realised by the society. In other words, the members are able to own one or more outfits in a few years by simply transferring their custom from the trader to their society. It is one way by which the work of the society becomes much appreciated, resulting in added strength and usefulness. It has been found that even ordinary co-operative credit societies, if they can raise the funds for buying such outfits for hiring out can make an income as good as, if not more than, they can from their normal banking business, and therefore generally welcome the idea of this additional activity. To the store societies of the kind we have been dealing with, the outfits will be very much more appropriate as stock-in-trade, especially in sugarcane tracts (see also page 111). There are a few small-scale out-

fits like groundnut decorticators, winnowing and cleaning machines, small flour milling, or grinding outfits, chaff cutters and so on, which can be owned and hired out or kept for use in the premises on payment of charges per hour or per unit of quantity handled and these will be found likewise both helpful to members and profitable to the societies. To the co-operative use of other and somewhat larger outfits we shall refer in a separate chapter, as they relate to special co-operative societies.

5. *Small tools and appliances.*—Alongside these comparatively expensive articles and what are called improved appliances, there is scope for including in the stock-in-trade, several small tools and other requirements which find frequent use on the farm. These are knives of different size, sickles, crowbars, hatchets, chains, nails, ploughshares, blades and teeth of cultivators and *kuntes* (harrows) of different types, ropes, measuring seers, buckets, baskets, basins, sieves and so forth. We have already stated that where conditions are suitable, other domestic requirements like provisions, clothing, etc., and sundry articles which are usually sold in the weekly *santes* or markets may be added with advantage to the articles dealt in. In these ways the societies will become more useful, function continuously every day, grow into institutions of some respectable size and become an essential part of village life.

6. *Controlled articles and other goods.*—For the same reason it will be advisable to utilise the services of these village store societies as agencies for the sale of the articles which at the present time are controlled by Government and to continue to do so as long as the controls last. The method adds to the useful life of the society, ensures goods being sold at exactly the controlled price prescribed, guarantees freedom from tampering with the weight or quality of the goods, affords easy accessibility to the rural population, and all these with the minimum of cost to Government. In Japan, it is reported that such societies are even entrusted in addition with the duties of procuring produce under the

procurement rules of Government, a procedure which was in vogue for some time in the Madras State. (*Cottage Industries and Agriculture in Japan*, by Chaman Lal.)

More advantageous than these from the point of view of agricultural improvement, will be the transference of the sales work of the Agricultural Department depots in respect of seeds, manures, and implements to these societies, and to graft them thereby permanently to the organisation, for the improvement of agriculture. A more intimate connection will then be established between the villagers and the technical staff of the Agricultural Department; all the abovementioned articles like seeds, manures, etc., insecticides, spraying chemicals and so forth will be available to them in time and in their own villages, in addition to advise as to their use. From the point of view of the Department, the system will mean the setting free of their technically trained staff for the duty of advice, inspection and demonstration from that of depot-keepers or tradesmen. Indeed the village societies, if organised and managed efficiently, can take up many other branches of co-operative work, and be constituted into what are called multi-purpose societies. We shall however deal with this subject separately. Particular reference is invited to Chapter XV of Chaman Lal's *Cottage Industries and Agriculture in Japan*, which will form very interesting and profitable reading in this connection.

It may be added that this principle of entrusting such sales of agricultural requirements to co-operative societies has been accepted in many States and action taken accordingly. It is only a question of time when these sales will be transferred in their entirety to co-operative societies. We must however sound a caution that no restriction, discrimination or other obstacle to the easy accessibility of these articles to all agriculturists without exception, should be exercised or allowed to creep in, and that the sole test of the success of the measure must be the satisfaction of the villager and the rapidity with which these improved articles are taken up.

CHAPTER IV

AGRICULTURAL MARKETING AND PRODUCE SELLING SOCIETIES

General Features

The success of agriculture as a business or the money returns from the year's operations will depend not merely upon the quantity or abundance of the produce, but also on what may be called certain business factors, which apply to agriculture in common with other forms of business. These relate firstly, to the cost of production and secondly, to the sale value realised. The lower the cost of production and higher the value of the produce realised, the larger is the profit from the business. "Produce cheap and sell dear" is a maxim which applies to all forms of business. We have in the previous chapter dealt with the role of co-operative societies in reducing the cost of production, *viz.*, (1) by securing cheap credit and (2) by obtaining the requirements of agriculture at as low a price as possible. We shall in a later chapter deal with some other methods of cheapening production through the agency of co-operation. In this chapter we shall deal with the sale end of the business and see how the movement can help in securing for the agriculturist as large a money return as possible. As already stated, societies which may be started for this purpose go by the name of Produce Selling, Agricultural Marketing or Producers' Societies, as distinguished from the Agricultural Store Societies described already which are intended for the buying of the requirements of agriculture. Before dealing with societies for different kinds of individual products, it will be helpful if we survey briefly the features of agricultural marketing in general prevailing in the country.

(*a*) *Sale in a glutted market.*—Most kinds of agricultural produce are brought for sale by producers immediately after they are harvested, threshed and prepared for market, and

practically every one rushes his produce to market at this time. The season is therefore one when the supply is in great abundance, there is a glut in the market and prices rule low, as compared with price levels later in the season, when the supply slackens. In the case of wheat and rice, " the seasonal slump in price is usually followed within five to six months by a 50 per cent. rise in price or more " (*Rural Marketing and Finance*, by the National Planning Committee, p. 15). The difference in price between the harvest season and later on in the year although it may not be so great, is usually very material—speaking of course of normal times, and in the absence of any control in prices, restriction of movement of goods or other interference by Government—and the producer who sells at this time gets a lesser return on his year's labour than he would be getting if he stored his produce in whole or in part and put off the sale to a later season. This difference is a normal feature of the market and the trader who invests money on purchase and sale looks to this difference for his profit, which normally will be in proportion to this difference. In the following table are given the prices of some of our products in certain markets during the harvest time and later on, which shows the magnitude of the difference, which rules normally and which is a measure of what the trader gains and what the producer loses.

Article	*Unit*	*Wholesale price trends*	
		Peak	*Lowest*
		Rs. A. P.	Rs. A. P.
1. Paddy ..	1 md. of $82\frac{2}{7}$ lb. of rice	5 4 0	4 5 0
2. Groundnut seeds	Per ton	120 6 0	103 7 0
3. Tobacco ..	1 md. of $82\frac{2}{7}$ lb.	14 0 0	12 0 0
4. Potatoes ..	do.	4 0 0	2 13 0
5. Orange ..	do.	15 5 4	6 14 10
6. Bengalgram ..	do.	3 8 6	2 9 3

(Figures taken from the Marketing Survey Reports of the Government of India, relating to the respective products.)

It is obvious that the producer should in justice be enabled to reap the advantage of these prices to as large an

extent as possible. The reasons why the producer does not adopt this obvious method of augmenting his money return are mostly such as force him to resort to this procedure, and it is not as if he is unaware of the better method. These reasons are mainly two, *viz.*:

1. The need for money is very great and pressing, such as the payment of the arrears on the expenses of cultivation, the requirements of the family of divers kinds, the payment of land revenue, or the discharge of debts and so on. All these require the immediate conversion of his produce into money, the produce being his only source of raising it.

2. The lack of storage accommodation in the houses. While the larger families may perhaps own granaries for the storage of grain to a certain extent, generally not much larger than for the year's domestic consumption, no one can afford the storage room necessary for the bulkier produce like groundnuts or cotton. Moreover there is the risk of deterioration in stored produce due to weevil and other insect attacks, or of moulds due to damp, even in the case of grains and pulses. Others like jaggery, for instance, will soften and even begin to run in the monsoon weather, others again like potatoes, onions, green turmeric, etc., cannot be stored for long, although for products of their kind they must be said to keep well. In these and most others as well there is loss due to driage, in addition to the lowering of the quality, due to ageing, with the exception of paddy in which ageing improves the quality (up to a limit). The lack of storage accommodation however is the main reason for the prompt sale. (Certain other aspects of 'Storage' are dealt with elsewhere, see pages 64–68.)

(*b*) *Sale in small lots.*—Produce is sold mostly in small lots. Many products are sold to itinerant tradesmen who buy it at the door of the producer, or to the smaller among the traders in the primary markets. The prices which such buyers offer are much lower than what the produce will fetch if sold in bulk to the larger purchasers, to whom as a matter of fact the smaller tradesmen themselves sell.

(*c*) *Lack of combination.*—There is a strong tendency for each individual to bring his produce to market himself, not only in the belief that he can effect a better bargain but also on the suspicion that he may be cheated if he pools it along with that of one or more of his neighbours. A dozen or more men from a single village each carrying a basketload of produce, a quart or less of milk, or a pot of curds, or a cartload in the case of the larger kinds of produce, is a familiar sight in every market, even though in most cases the whole quantity could be collected and brought for sale, sold to better prices, and a good deal of labour saved. Indeed if the men could only be pursuaded to pool their produce, buyers may be attracted to the village itself and the trouble, time and expense of taking them to market can be saved.

(*d*) *Diversity of weights and measures and manipulation.*—A very disconcerting feature in the markets is the multiplicity of weights and measures. It is a legacy from the past when almost every petty chief had his own weights and measures, and in spite of all attempts, including legislation, to fix standard weights and measures and their exclusive use, many of these persist and are certainly very much alive, judging by their extensive use. Taking peninsular India alone, for instance, Tirunelveli in the far south has weights like a pothi (250 lb.), a tulam (1/12 pothi), a palam (1/100 tulam); Tanjore has 1 seer (of 8 palams), a viss (of 5 seers) and a maund (of 8 viss); Salem has 1 thulam (2½ thuku), a sattai (16 thulams), a moda (16 vallams) and a pothi (of 6 modas); Malabar has a palam (12½ kazhanchis), thulam (100 palams) and a bharam (20 thulams); Coimbatore has a viss (of 15 palams), a maund (of 8 viss), a pothi (of 10 maunds or 12 thulams); Godavari has a viss (of 2 padala), a yettedu (of 2 viss), a maund (of 4 yettedu or 25 lb.) and a putti (of 20 maunds). The seer weight itself varies greatly according to the kind of article weighed, for example, in the case of ginger, onion, garlic, etc., it is 24 tolas, of chillies it is 105 tolas, for vegetables it is 180 tolas and so on. Within the Mysore State a palla is 50 seers, or 100 seers and a candaca

is 160 seers, 180 seers, 200 seers and even 2,000 seers according to different regions. A bewildering collection arranged according to the districts of South India will be found in *A Note Book of Agricultural Facts and Figures*, by R. C. Wood. In addition to this diversity, traders may be found to use one set of measures (or weights) when buying and another set when selling, the buying measures being always larger, in order ostensibly to allow for driage, handling losses and similar causes of shortage.

Moreover, in addition to the weights and measures used, the weighing appliances increase the confusion, and in general possess the common factor of working to the disadvantage of the producer. Thus weights may range from standard government stamped ones down to blocks of stone or odd pieces of metal of all sorts, whose correctness is questionable but which has to be accepted without demur. Weighing scales likewise vary from well manufactured steel beams with metal pans slung by chains, to mere affairs made up of a wooden rod for beam and bamboo trays for scale-pans slung by strings. Steel yards are not uncommon for weighing a pound or two at a time. Weighment is always in very small lots of a few pounds, so that at each weighing there is something gained, trifling by itself but adding up to quite a lot on each bag or cartload. Gains due to methods of handling while weighing or measuring are common enough and are generally put up with except where palpable fraud is perpetrated. In the primary markets at any rate (where the producer sells direct to the trader or to the itinerant buyer), it is generally a clash of wits between buyer and seller, and the weaker goes to the wall, but more often than not the weaker one is the producer.

(e) *Indebtedness of the producers.*—In many cases, the producer is not a free agent, who could sell his produce to any trader he pleases because he often happens to be indebted to particular traders, either because he has received an advance of money on the promise of selling his produce to him, or because he has regular banking transactions with the parti-

cular trader. As a matter of fact, traders generally ensure the custom of producers by granting them a money advance which may bear no interest at all or a lower rate than current rates, in consideration of which the borrower promises to sell his produce only through or to him, either at or below market rates. The producer is therefore obliged to sell his produce to one particular individual even when he knows he can sell to better advantage to some one else in the market. This is a rather common feature of the market and is not confined to the small producers alone. Large producers like the tea, coffee, rubber or cardamom plantations have similar connections with trading firms. The latter are bankers lending them money for working expenses; they are buyers of the produce either outright or as brokers; they sell to the producers all their requirements like manures, spray materials, implements and stores of all kinds, generally on credit. Similarly, in the case of the small producers, the trader who buys the produce is also their banker and supplier of general stores and domestic requirements like clothing, groceries, etc. The trader thus gains both by selling to the producer and by buying from him and if, as is alleged generally, he exploits the producer then he does so at both ends. This connection once established is a very intimate one, and however much the producer may feel that he is not getting a fair deal, in practice he will find it well nigh impossible to end it and become a free agent. This will have to be borne in mind when the formation of co-operative societies for marketing are thought of.

(*f*) *Broker often a trader also.*—In the larger markets the sale of the produce takes place usually through brokers; in fact, it is the brokers who own the sale rooms and storage godowns and it is in their premises that the produce is delivered from the villages, and exposed for sale. It however happens that these agencies act not merely as brokers but are also actual purchasers. They buy largely when produce is cheap and when they have reason to believe that prices will rise steeply and so on. Their role as outright

buyers therefore, gives them a strong personal motive and incentive to making profits in which the producer will have no share, and their expert knowledge of the trends in the market and of the ways of manipulating it makes it easier for them to do so. Such a combination of functions leads to many malpractices and in many kinds of business it is forbidden on this account, the broker being quite separate from the actual dealer or buyer. At any rate, when produce is sold as in the primary markets and where it leaves the ownership of the producer immediately, without any means on his part to store it, the producer is deprived of the opportunity of sharing in increased prices, if such an increase should happen.

(g) *Secret settlement of prices.*—In the case of many kinds of products it is customary in most markets to settle the prices between the buyer or buyer's agent and the broker not openly but 'under cover'. That is to say, the two clasp hands under the cover of a towel or cloth and 'speak' to each other through certain conventional signs or secret fingering code, the touching of particular fingers and joints therein having an accepted meaning, both in respect of integers and fractions, in respect of rupees, annas and pies. The producer merely looks on and at the end of the bargain the price is announced to him, but the suspicion is that this is less than the one settled; whether the suspicion is well-founded or not, the point to note is that it is a secret bargain, demoralising to both parties and according to general belief detrimental to the producer. So that even when goods are sold only on a brokerage basis and in the presence of the producer, there is a strong presumption that he is not getting a fair deal. The method has only to be acquiesced in, because it is the general custom and no matter to which broker or trader the producer may go, the sale is made in the same secret way. Public quotations of prices and a notification thereof to all sellers of produce, and open auctions are a great desideratum in nearly all markets, although these are provided for under legislative sanction in the Regulated Markets now being opened in many trade centres. That

legislation has to be resorted to shows not only the strong hold which the practice has taken, but also the extent to which it is considered prejudicial to the producer's interests.

(*h*) *Too many middle men.*—Finally an important feature especially from the point of view of the need for co-operation among producer-sellers, is the existence of a number of middlemen between the seller and the ultimate purchaser. These middlemen are of varying grades, from the itinerant purchaser going from door to door buying produce in small lots to the larger and larger brokers or buyers and even touts, until the produce converges into the hands of the exporter or the large capitalist merchant or the mills and factories. Each of these middlemen performs a definite service in the assembling of the produce from many sources, both small and large, and has to be paid for his services. Similarly, when produce so assembled, is let down into the channels of distribution so as to reach the consumer, it comes down from the wholesale merchant through smaller and smaller sellers, including the hawkers or basketmen or kerb vendors to its destination in the hands of the consumer. Each of these also performs a definite service for which he has to be paid. In the result there is a large difference in the price which is paid by the actual consumer or the ultimate buyer and that received by the producer. The accompanying table shows the amount of such difference in the case of a few articles in the Madras State.

Article	*Unit*	*Price to Consumer*	*Price to Producer*
		Rs. A. P.	Rs. A. P.
Paddy ..	maund	1 12 10	1 3 3
Groundnut seeds ..	Rs. 100 worth	5 6 10	2 14 0
Tobacco ..	maund	13 13 7	9 9 0
Coconuts ..	20 nuts	4 6 0	2 10 0
Potatoes ..	maund	4 2 3	2 4 3
Oranges ..	100 fruits	6 8 0	3 8 0
Bananas ..	350 ,,	2 7 0	1 0 0
Bengalgram ..	maund	2 12 8	2 1 0

(Compiled from the Marketing Survey Reports of the Agricultural Marketing Adviser, Delhi.)

This is a common feature in all countries and in most books on Agricultural Co-operation, similar data may be found relative to their markets.

Thus according to the latest data published by the Bureau of Economics of the Department of Agriculture, U.S.A., the producer's share of the price paid by the consumer in respect of certain important articles of food was as shown below:—

Article	*Producer's share %*	*Share of the Trade %*
Grains	22	78
Fruits and vegetables ..	33	67
Dairy products	53	47
Poultry and eggs ..	57	43
Meat	62	36

(Data for June 1950)

Obviously the producer is entitled to as large a share as possible of the final price paid by the consumer and both equity and the larger interests of society demand that the toiler in the field should receive as high a return as possible for his year's labour. Towards this end the possibility and ways and means of either extinguishing the middleman's charges altogether or of reducing them to a minimum have therefore to be considered. It will be found that middlemen of certain classes and at certain stages are unavoidable and need not be looked upon as a necessary evil. Some are positively useful because it is through them that produce of many kinds and grades including choice and the culls, suited to different levels of consumers find a sale and markets and channels of distribution are fully explored and a glut prevented. Many of them also add to the ease with which the public can obtain their supplies. In practice, therefore, the remedy will lie firstly, in reducing their number and in substituting co-operation among farmers for one or more stages in the assembling or distribution, secondly, in a reduction of the charges levied by middlemen and thirdly, in improving the conditions of marketing, by the removal of what are called malpractices.

The conditions regarding the last two drawbacks in the present methods must be considered to be rather abnormal and are capable of being fully remedied, as is attempted under the new Regulated Markets scheme. Nevertheless they do act as a great handicap as long as they continue. It should be pointed out however that the producer is not altogether without blame on his side also, and the trade is not slow to make much of his faults, in the same way as the producer complains against the malpractices and exploitation by the trade. Perhaps, it will be useful to state exactly what these allegations and counter-allegations are, although reference has already been made to some of them.

Allegations against merchants.—As against the merchants they are,: (1) The use of weights and measures which are not standard and which work always against the producer. (2) Even with these, causing further loss by skilful manipulation. (3) Weighing or measuring in small lots of a seer or pound with the possibility of a little gain at every measurement, instead of using a platform scale or other large appliance. (4) Settling price under cover. (5) Condemning or crying down produce, after it is delivered, as not true to sample, thus forcing the seller to accept a lower price as a kind of Hobson's choice. (6) Including a number of unreasonable items of charges in the bill, like dharma, cow fund, etc., besides the levy of perquisites in kind by way of sample, gifts to weighers, cleaners, etc. (7) Putting off of payment of cash or charging a heavy discount in the alternative, and petty exactions or harassment sanctioned by custom and enforced by combination among the traders. As examples of the charges levied, of the kind referred to in item 6, the practice usual in some of the markets in the Mysore State which were surveyed by the author some years ago, are given as specimens:—

The items alone are of interest, as the figures for the actual sums may not apply now, being many years old.

In the Shimoga areca market, are charged:

	Rs.	A.	P.	
Dallali	0	2	0	a maund
Tarapadi	0	0	6	
Dharma	0	0	3	
Thuka	0	0	3	
Tappal, Rusum ..	0	0	6	

Discount at 12 per cent. for 1½ months, if cash is paid immediately after sale.

In the Chitaldrug cotton market, are charged:

	Rs.	A.	P.	
Dallali	2	0	0	per Rs. 100
Dharma	0	2	0	
Hamali	0	6	0	
Pakki per cart ..	0	1	0	
Rusum ,, ..	0	1	0	
Go fund ,, ..	0	1	0	
Battara ,, ..	1	8	0	
Thread, etc. ,, ..	0	3	0	

In the Davangere groundnut market were charged on groundnuts sold worth Rs. 262–14–6:

	Rs.	A.	P.
Commission ..	5	4	0
Charity	0	3	0
Rusum	0	3	0
Hamali	1	7	0
Pakki	0	9	0

In the same market on Bilijola worth Rs. 694–15–6 were charged:

	Rs.	A.	P.
Commission ..	10	13	6
Charity	0	11	0
Rusum	0	11	0
Hamali	2	2	3

Allegations against producers.—As against these allegations it is argued that producers resort to more than one kind of fraud, such as covering up inferior stuff in the interior by high class material outside, the watering of produce like groundnuts to increase the weight, selling of partially cleaned product, mixing of sand, chaff and other dirt, old produce,

etc., in articles sold by measure, or concealment of foreign matter and even large stones and admixture of inferior grades, in articles sold by weight, and so on. It is against such deceit that the trader resorts to counter-measures by way of self-protection. It is also argued that there is so much competition among buyers and brokers for the ryots' produce that many go out of the way to placate and please them in many ways, chiefly through a money advance, and that therefore it is the producer who holds the whip hand. It cannot be denied that there is gross adulteration of produce which is a case of deliberate fraud and a general lack of grading in the produce which is due to custom, both of which are fertile causes of friction among the parties giving rise to most of the malpractices complained of.

Regulated markets.—We have already stated that under the Regulated Markets Legislation, there will be no room for such practices and both parties, and especially the producer, will be well protected.

The new system is being gradually introduced into all the main market centres and may before long displace the old system completely.

The following rules framed under the Mysore Agricultural Produce Marketing Act, 1939 (No. XVI of 1939) are given as an example of the provisions made for preventing malpractices and protecting the producers:—The rules provide (among others):

1. All traders in the regulated market should be registered and be subject to the rules of the market, and no person shall be allowed to buy or sell unless he is so registered.

2. Likewise all brokers shall be licensed and be subject to the conditions of the license and no broker shall act for more than one party in the transaction.

3. The number of brokers to be licensed will be restricted according to the requirements of the market.

4. No trader shall weigh or measure produce for purchase or sale except on correct scales and measures, approved by the Committee.

5. The fees payable to any licensed broker on account of his services shall be according to the scale of rates fixed by the Committee, and the demand and receipt of any unauthorised fees directly or indirectly will be punished.

6. All brokers and commission agents shall maintain registers prescribed, for entering all details of transactions, and shall duly submit daily or monthly returns as may be prescribed.

7. All weighing and measuring staff will be licensed and all weighments and measurements in the market shall be carried out only by such licensed weighers and measurers.

8. The fees for such weighers and measurers shall be at rates fixed by the Committee and any other demand either directly or indirectly will be punished.

9. The weights and measures used shall be those prescribed by law (Weights and Measures Act and the Cotton Ginning and Pressing Factories Act), and a set of such legal weights and measures will be kept by the Committee, with which traders can compare their own. The latter shall also be inspected by the Committee once a quarter and stamped in token of approval.

10. Trade allowances shall be fixed by the Committee and recorded in the bye-laws.

11. No licensed broker, trader, weigher or measurer shall demand, take or retain any unauthorised allowances or any sample not paid for and infringements will be punished.

12. The prices of the produce shall be settled in the open market, that is, the market-yard, and no deduction shall be made from the agreed price of the consignment except for the inferior quality of produce as compared with the sample on the basis of which the purchase was made or for damage including excessive moisture.

13. The price shall be settled openly and not by any secret signs.

14. Payment to seller shall be made the same day direct by the purchaser if the seller so desires.

Regulated Market, Mysore—Offices and Shops

— Photo by courtesy of the Director of Agriculture in Mysore.

An additional safeguard imposes upon the purchaser the obligation to execute an agreement in favour of the seller, that he will not refuse to take the produce at the agreed price when it comes to be unloaded, and that if he does so, the matter will be referred to the Committee whose decision will be binding on him.

The full control of the market, the levy, collection and administration of the funds, the provision of all facilities and amenities, such as shelter, water, sanitation, etc., will be in the hands of the Market Committee. The Committee will comprise representatives of the producers, of the District Board or Municipality and of the trade. The punishments for the infringement of the rules and conditions of trading in the market may include cancellation of licenses or removal of names from the Register, and/or fines which may range from Rs. 10 to Rs. 50.

The criticism has been made that in the Committee of Management of the Regulated Markets, there is no provision made for the representation of Co-operative Marketing Societies specifically, although provision is made among others for the trade and for individual producers. Specific statutory provision for the inclusion of representatives of Co-operative Marketing Societies is certainly desirable and will probably be made before long. (" Report of the Mysore State Seminar on Co-operation, 1950", p. 164.)

Better prices obtained in Regulated Markets.—Regulated Markets have been found to be a great boon to producers resorting to them. In a survey made by the Osmania University, it was discovered that producers gained materially by selling in such markets and that the net gain by selling in them as against selling in unregulated markets was as below:—

Net gain per rupee by selling in the Regulated Market, Raichur.

	Rs.	A.	P.
Cotton	0	2	1
Wheat	0	3	4
Jowar	0	2	9

The following table gives an idea of the comparative prices paid in some Regulated Markets, as against the Un-regulated Markets:—

	Price paid in *Un-Regulated Market*	*Regulated Market*	*Net Gain*
	Rs. A. P.	Rs. A. P.	Rs. A. P.
Groundnuts per maund	1 12 6	2 6 3	0 9 9
Castor Seeds ,,	2 14 6	3 8 5	0 9 11
Paddy ,,	2 4 6	2 14 2	0 9 8

(Dr. A. L. Quereshi, *The Future of the Co-operative Movement in India.*)

The opening of Regulated Markets in India is probably the most outstanding improvement brought about in the sphere of agricultural marketing in recent years.

How a Co-operative Produce Selling Society helps.—A co-operative society formed for the selling of produce not only avoids all these malpractices and sources of loss to producers complained of but may be able to charge lower rates for all the services rendered. The latter is generally not done and charges are fixed at the same rates and deductions and other allowances are also fixed at the same figure, but in the final result all these payments accrue to the producer-members themselves in the shape of dividends or profits or of rebates, if these are allowed. In some cases these deductions and allowances amount to such a figure that they contribute to the profits most. For example the floor or bottom grade and the sweepings in the areca marketing society which, according to custom, go to the merchant will be found to yield a substantial amount in the aggregate. Similarly, cotton collected as allowance as driage and as samples will also be found to yield a goodly sum. All these come back to the producer-sellers in the shape of profits at the end of the year, so that even though it may appear that in this respect the society is no better than the merchant, in reality, it is quite the reverse. Above all, is the fact that the society itself is the middleman and all such charges as accrue to the middleman merchant as payment for his services in the shape of brokerage and other charges accrue to the

society, *i.e.*, the members themselves. The main feature of a society as distinguished from a middleman merchant will be that it sets its face against exploiting tendencies, guarantees absolutely correct quantity and quality and adopts a strictly honest and helpful policy.

Requirements of a Produce Selling Society

(*a*) It will be necessary to investigate the scope for such a society before deciding to start one, especially if the marketing conditions are so unfavourable to the producer as to warrant it and if the producers themselves are aware of and resent the conditions sufficiently to appreciate the advantage of a combination among themselves. The first condition may generally be assumed but the second does not always exist. As in the case of the Co-operative Movement in general, the demand may not come from the men concerned, but will have to be canvassed for, explained and the organisation then started (speaking of conditions in India) in the conviction that it will be greatly to their advantage. Nevertheless a feeling of dissatisfaction on the part of the producers with the conditions of marketing and a ready response to any suggestion for its betterment will be a great asset and a society started under those conditions will have a greater chance of success.

(*b*) It will be essential to make sure of the finance necessary to conduct such a society. Societies of this kind may work on either of two methods, *viz.*, (1) Members' produce may be brought to the society's premises to be stored and sold at some future date; and (2) Produce may be brought for sale on the spot at the day's ruling price, the sale proceeds being paid to the producer then and there either in full or in part. In the first method, money will have to be advanced to the member up to a certain percentage, say 50 or 75, of the estimated value of the produce delivered, leaving the adjustment of the full value to a later date after the produce is sold. Even in the second case, although payment may be made out of the

sale proceeds the same day that the produce is delivered and sold, still an advance will have to be paid to the producer-member earlier in the season both for meeting his cultivation and household expenses and for ensuring his bringing the produce for sale only to the society. Although loyalty demands that he sells it only through the society, still in practice it will be found necessary to reinforce this virtue by a money advance. Indeed whether it be a society or a private trader, the " no advance, no produce " mentality of the ryot must be reckoned with and provided for. Whichever of the two methods may be adopted, ample funds or banking accommodation for these payments should therefore be available.

In this connection a rather interesting method of making the advance which is adopted in the Cotton Marketing Society of Gadag (Southern Bombay) may be mentioned. Members of this marketing society enrol themselves also as members of an ordinary credit society in their own village, and from this latter society they can borrow a crop advance roughly proportionate to the acreage of cotton sown by them, the condition being that they will market their cotton solely through the Cotton Marketing Society, which in its turn repays to the credit society the loan or crop advance, out of the sale proceeds of the member's cotton. This system, firstly, delimits the functions of the two types of societies, so that each may concentrate on its special function; secondly, it enables a crop advance being given to a member by a society which has every means of ascertaining both his worth and the acreage put down by him; thirdly, it ensures repayment without default of the sum borrowed. This sort of linking up a credit society with a produce selling society is well known and is worthy of wider adoption.

The general practice is however for the marketing society itself to undertake the financing, confining the payment of advance only to produce after it is delivered to it. Sometimes advance payment has to be made a long time before the produce is delivered, as a crop advance, as already

explained, and for both these purposes money is borrowed by the society from a Central or Apex Bank. There is of course some considerable risk in the latter procedure of advance payment which may arise in two ways: The member may fail to market his produce through the society or market only a portion through it, whose sale value may not cover the amount of the advance; or the price of the produce, when it is delivered, may be very much less than it was anticipated when the advance was given, and the sale proceeds may not therefore cover the advance. In fact, members may sometimes be so clever as to market their produce through the society when prices are low and bye-pass it when prices are high. Societies usually try to protect themselves against such diversion of produce by imposing penalties, like fines and even expulsion from membership, but subterfuges are not difficult and unscrupulous members do not hesitate to resort to them. Such occurrences may be rare, but the two risks are real and caution will have to be exercised in deciding the amount which may be advanced with minimum risk.

We may mention that this particular failing (and indeed the bulk of the others which we have listed) is not confined to India, if that should be any consolation. We read, for instance, that in Sweden when a Co-operative Slaughter House Society was started, it was made compulsory on the part of all members that they should deliver their animals to the Society alone, so that a steady market could be secured to the Society. This was very much disliked by the members, because but for the compulsion "they would have delivered their animals to the Society only when the market was full, and every one wanted to sell and prices were therefore low and not when there was a shortage and everybody wanted to buy and prices were consequently rising". (*Farmer's Co-operation in Sweden*, by Ake Gullander, p. 38.) Other instances may also be quoted, which would all go to show that human nature is more or less the same all over the world.

Storage of produce.—Produce-Selling Societies are obliged to store members' produce for sometime, unless they are merely broker's establishments, selling each day's delivery as it comes in. Such storage may be only for a short period of a week or fortnight or for a prolonged period of several months. They must possess therefore the necessary godown or storage accommodation. In the case of the short-term storage, no special store may be required, and the building in which the society is housed may serve the purpose, if it is moderately large or contains at least one large room or hall. If, on the other hand, produce has to be stored for prolonged periods, then special storage godowns will have to be built or hired. It will be useful in this connection to have an idea of the main requirements of such godowns or stores, as in the course of the author's inspection several structures were come across which were very faulty as store godowns. These requirements are mainly the following:—

They must be well protected against rain, whether direct through leaky roofs or beaten in through the windows, ventilators or other openings. Flat terraced roofs are preferable to tiled roofs, as the former afford more protection and are also suitable when fumigation or other insecticidal treatment has to be resorted to. In the case of tiled roofed buildings eaves should project considerably more than usual and in the case of flat roofed buildings, doors, windows and ventilators should have *sajjas* or hoods over the lintel, so that rain water may not be beaten in during heavy rain or storm. The floor should be laid thick with at least 6 inches of good concrete, and the bottom of the walls should be brick in cement up to a height of 18 inches; both these provisions will cut out damp from the moist ground from creeping up and also prevent bandicoots from burrowing in. The interior corners should be rounded off and walls plastered smooth, so that no lodgement is afforded for moths and other insects which may damage the produce. It should be seen to that there are no cracks, holes, ledges or bird shelters, so that there is no room for rats, squirrels, or birds

to harbour or gain entry into the godown. Windows and ventilators should for the same reason have wire netting stretched across them, and shutters should be capable of fitting tight when closed.

It will be found convenient to store produce in bags and not in heaps and in that case low cement platforms about a foot high and some 15 to 18 feet square will have to be erected in rows, either single or double, with ample space all around for workmen to walk around, while piling or taking down the bags. It will be an advantage if a drying yard adjoins the building, in which case a large drying floor plastered or cemented, may be made, on which produce may be dried when necessary without the admixture of earth or dust as from a mud floor. Sometimes in the case of a flat roofed building, the top surface may itself be used as a drying floor, but this will necessitate some mechanical hoisting arrangements or carrying up along a good staircase. If the structure should be built around a large open quadrangle, then this open space itself may be used as a drying yard, suitably paved. In fact, this will be found a very convenient layout, with the rooms on all the four sides with a large gateway in front, or only on three sides. The room will open preferably into the yard, thereby adding much to the safety of the goods.

The stores are mainly intended for grains, pulses, oil-seeds and the like but for other kinds of produce, the requirements may not be the same. A typical example is cotton, for which a very large space whether indoors or outside is the main requisite. Produce like arecanut, coffee and cardamoms should have garbling and grading accommodation in addition. Copra and cocoanuts need little more than safety under shelter. Potatoes, onions and garlic need also large storage space, with further facilities for opening the bags, or examining the heaps, and removal of spoiled material, and re-bagging or spreading out. Jaggery stores will need a low platform on wooden slats or just jungle wood, so that soft and running material may drain out and not mix with good

jaggery. Where societies handle many different kinds of produce like chillies, garlic, onions, or tobacco, along with grains and pulses there should be facility for storing them separately from each other, on account of the strong odour of some of them. Even when only one product like paddy is dealt in there should be separate rooms, or at least dividing walls for keeping varieties like white rices, red rices, fine rices, coarse rices and so on separately. In the main, safety, protection against damage by weather, insects and vermin, and a sufficiency of space are the principal requirements of all stores. In particular cases, especially in cotton for example, there is the risk of fire, and societies of all kinds whatever the products dealt in are liable to the same danger. An insurance against fire should always be taken out, and the expenditure should not be grudged.

Grain elevators.—This type of grain stores consists of large tower-like structures or bins, in which the grain is stored in bulk, being handled throughout in bulk and not in bags, in trucks from the farm, in the elevators and in the ships' hold. Hauling up of the grain for filling into the bins or towers, is by means of mechanical 'elevators', the bins are filled one after another by mechanical means, and the grain is drawn out through spouts like water when it is to be filled into the holds of ships or into railway trucks. Such elevators are installed by large trading corporations or Farmers' Co-operative Societies and presuppose both production on a very large scale and a high degree of mechanical knowledge and experience and are hardly to be thought of for India. The only one installed in India at Lyallpur (Punjab) was at a staggering cost and had to be abandoned, as it was not wanted by any one and for other reasons into which it is needless to go. On a small scale, the use of metallic bins is coming largely into vogue in the U.S.A., which are found very suitable for individual farmers. Among other advantages these are suitable for being locked and sealed by the owner or by the Government or Bank who may advance money on the security of the produce and further of being

located in the farmer's premises, so that grain need not be transported to any central store or elevator.

In Upper India, merchants store wheat in pits underground, somewhat like the *hagevus* of Mysore. This is attended with serious risks of damage by moisture, especially in the soils of the Gangetic alluvium. Although in recent years this risk has been overcome by the use of cement-lined cisterns, the difficulty of digging innumerable pits in crowded towns is almost insuperable, with its risk to buildings close by. It is surprising that it should continue even at present. Above-ground storehouses or godowns which have been described should be considered the most suitable to Indian conditions and deserve adoption.

Licensed Warehouses.—Reference may be made to the institutions called Licensed Warehouses, in this connection, because it is sometimes suggested that Produce-Selling Societies may be eventually developed to perform the functions of licensed warehousemen. These institutions provide the facilities for receiving and storing in safe custody particular kinds of produce, which may be deposited by producers (members in the case of co-operative societies); a receipt is issued therefor, which unlike ordinary receipts will be a negotiable document and can be bought and sold, the goods being delivered to the party who may finally present it, duly endorsed for such delivery. They are also deemed as securities, on which banks will advance loans up to particular limits. Charges for such storage and safe custody and allied responsibility are fixed according to the kind of goods, quantity, space taken up and other factors and these are payable before delivery is taken. The goods (*i.e.*, the receipt) can be sold by the producer at any time he thinks most favourable and it may pass many hands before the final clearance from the warehouse, each one in the chain of successive purchasers making a profit or incurring a loss according to the state of the market as between his purchasing it and selling it. Such warehouses require to be licensed, under due legislative enactment, and where

they exist it is claimed that they have been found both useful, and successful. They are however concerns owned by capitalists or banks. The suggestion is made that Produce-Selling Societies should take up a similar function and should be empowered to do so for the product they handle, if it would admit of such storage. The system has of course advantages, but it presupposes several conditions which will have to be guaranteed. The most important one is the quality of the goods, a grading according to trade conventions and an absolute guarantee that the goods will be exactly true to the quality claimed for it, and which may be stamped upon the container, bale, bag or bundle. There should be no need for any purchaser to open them and examine the contents, as is the case in ordinary market sales. The guarantee will also apply of course to the quantity or weight claimed for it, so that purchasers are sure of the quality and quantity, and need have no fear that they may be buying 'a pig in a poke', so to speak.

It is however doubtful if in India many products could be stored in this manner, unless they are sold and let into the channels of distribution within a very few weeks or months after they are brought in, for in many of them deterioration of one kind or another is likely to set in as the result of mere keeping, not to mention insects or moulds. Cotton of special varieties, true to name and unmixed, and ginned and baled, silk likewise reeled and baled, and a few others may lend themselves admirably. In other cases many goods can be stored for a few weeks' storage, but it may be doubted if such a short period will make it worth while. Moreover, such great care and attention as is required for the purpose will be possible only for the larger purchasers after the produce is bought and therefore cannot be thought of for the primary producers either singly or co-operatively as in a Produce-Selling Society. Of course it is not an impossibility, and in any case the system of grading produce and guaranteeing quality are both greatly to be desired, and with the improvement in conditions may be expected to

come in. We may perhaps mention that opinions are very much divided as regards the need and the scope for such a system. The National Planning Committee (India) on Rural Marketing and Finance, strongly recommend the system, while others would not favour it (*vide* page 128, "The Co-operative Movement in India," by E. M. Gough).

It is also worth noting that the whole idea of storage of produce by way of holding it up for better prices, as a method of helping the producer to obtain a better return, which has been almost axiomatic in agricultural co-operation, is being looked at from a new angle, consequent in no small measure on the present food shortage in the country. It is characterised as a system of hoarding, definitely working for a scarcity and high prices, and tantamount to an unsocial act. On the one side it is doubted whether when all factors such as godown rent, insurance, interest on borrowed money, loss due to driage or damage in quality, are taken into consideration, any increase in price will leave a margin sufficient to make it worth while, and further that as markets are proverbially uncertain, a lowering in the price may also happen, in which case the whole proceeding will stand condemned. In defence, however, it must be said that the holding up of the kind contemplated is only to avoid a glut in the market and consequently a lower price which follows unexorably whenever the supply exceeds the demand. Produce so held up is only for a short period, and even during that time it may be let into the market in instalments and there is no question of creating a scarcity or other unsocial act. An even flow of goods into the market is better than a glut alternating with a scarcity, and as against the charge of hoarding and unsocial action it may be argued with even greater force that the storing in such societies and other public agencies will make procurement easy. As regards its financial aspect it is quite true that there is no certainty that prices will go up, but experience is almost universal that it does so, with a regularity amounting to a

certainty. At any rate the merchant's business is based upon the belief that it will, and he is rarely disappointed.

The Madras Warehouses Act, 1951.—Nevertheless practical action in the direction of starting licensed warehouses has recently been taken boldly by the Government of Madras, by the passing of the necessary legislation, *viz.*, Act. No. XV of 1951, which received the assent of the President and became law on the 12th June 1951. The Act which is intended "to encourage the establishment of warehouses and provide for their proper supervision and control," applies at present to the following goods:—(1) Paddy and rice; wheat and wheat flour; cholum, cumbu (bajra) and ragi; Bengal gram, red gram (tuver), blackgram and pulses of these grams; other food grains; (2) Oilseeds, including groundnuts, gingelly, castor, and copra, cocoanuts; (3) Fibres, including cotton, kapas or lint, palm fibres, sannhemp and Bombay hemp; (4) Senna and tea; (5) Arecanuts; (6) Jaggery (sugarcane and palmyra), sugar; (7) Spices and condiments (including pepper, cardamoms, ginger, chillies, turmeric, coriander, onions, garlic and tamarind; (8) Potatoes.

The main provisions of the Act (which are to be supplemented by rules to be framed and published by the Government in detail later on) relate to the following:—Conditions for the grant of license, both in respect of the qualifications of the warehouseman and of the suitability and conduct of the warehouse itself; and likewise for the cancellation of licenses; duties of warehousemen in respect of proper care of the goods deposited, cleanliness of warehouse and keeping it free from damp, and the taking of precautions against rats and other pests; not accepting goods likely to damage others already stored; preserving the identity of each depositors' goods or of goods for which separate receipts have been issued; intimation to depositors if goods are deteriorating, by driage, shrinkage or absorption of moisture and notice to take delivery of them; and action to be taken if goods are not taken delivery of soon after; prompt delivery of goods, and allowances for loss or gain in weight;

insurance of goods; prohibition of dealing in or advancing money on the goods deposited, from which provision co-operative societies are specifically exempted.

Other important provisions are: Warehouse receipts are to be issued for the goods deposited which should contain full particulars of the goods.

Such receipts are transferable by mere endorsement and shall entitle the lawful holder to the goods specified in it, on the same terms and conditions as the original depositor.

The warehouse, its condition, its machinery and equipment, the goods deposited therein and the accounts, books and records are subject to inspection by the prescribed authority, in order to see that the requirements of the Act are being complied with.

Warehousemen shall provide for the weighing, sampling and grading of goods deposited and all such weighers, samplers and graders will possess the required qualifications and shall be duly licensed.

In the case of disputes, appeals and complaints, regarding the refusal or renewals of licenses, weight, bulk or quality or grade and other matters, the decision shall lie with a Board of Arbitrators appointed for the purpose.

Offences under the Act are also defined and the penalties comprising one year's imprisonment with or without fines provided. The rules to be framed under the Act shall provide among other matters for the conditions to be inserted in the licenses, the publication of lists of warehousemen and licensed warehouses, charges to be levied by warehousemen for their services, the conduct of auctions for the sale of deteriorated or deteriorating goods, disinfection of warehouses and goods stored therein, qualifications of weighers, samplers and graders and the conditions of their licenses, standard of weights, measures and gradations of the goods to be used, the procedure to be followed in proceedings before the Boards of Arbitrators and the mode of executing their decisions.

It will be seen that the Act contains many of the features which we have described above. It is certainly an

important further step in the regulation of marketing and should if availed of in the manner expected, be of great service in co-operative marketing and result in increased returns to the producer.

Societies to Deal in Single Product

It will be desirable that a produce-selling society should deal only in one single kind of produce, for which it may be started, and to confine itself to that particular single item. Produce like cotton, groundnuts, cocoanut and copra, paddy, chillies, tobacco, jaggery and so on should each be dealt with by a separate society, which should be located in the main trading centre for that particular produce. This will conduce to both efficiency and convenience. It will then be possible to devote special attention to cleanliness and grading and quality of the produce, to create a definite and well-recognised market for the produce to which merchants may be attracted automatically, and to facilitate the holding of auction sales, if that should be the system of sales adopted. Other matters of practical convenience relate to storage as already explained and the facilities necessary for handling the produce.

Even when confining itself to one kind of produce, a society may select some particular variety or superior strain in it; examples are the M.A. IV cotton in the Dharwar American cotton and recently the M.A. V cotton, as is sold by the Arsikere Cotton Sale Society (Mysore), the Jayawant cotton or the Kumpta cotton as is sold by the Gadag Society, the Cambodia special strain Co-4 in the Tiruppur Society (Madras), or the Sel 69 sanna hatti of Maradihalli Society (Mysore). These are not usually dealt in by the ordinary traders, or if they do, there is no special value paid for the quality, all kinds being treated alike (within the particular cotton). There will therefore be no competition with the trade on the one hand and there is the possibility of selling the special quality of the produce at a premium, which can be secured from particular buyers who

are on the look out for and eager to buy such special produce. It will also be possible to work in conjunction with the Departments of Agriculture in their attempt to popularise the variety and to extend its cultivation as a pure crop.

A noteworthy example of such a society is the Cotton Sale Society in Gadag, which markets the particular selection put out by the Department of Agriculture and helps in obtaining the highest price possible for it, co-operates in ensuring and distributing pure seed, in extending the area but chiefly in obtaining a better money return to the grower. The fortnightly auctions which are well advertised, the grading and sale in selected and guaranteed lots, the ginning of the kappas of the best grades separately for large scale distribution of pure seed and the method of financing (already explained, *vide* page 62) are its special features. The similar attempt to ensure a premium for the special cottons in Mysore is the special feature of cotton societies in this State as elsewhere in other parts of India.

Methods of Sale and the Grading of Produce

Produce Selling Societies may sell members' produce either as ordinary individual bargains or in organised auctions. In both cases it may be sold either as such or in lots previously graded into different qualities. The simplest form is to sell it as such in individual bargains at the day's price or better, if possible. Produce is exposed for sale as in any ordinary *mandi* and purchasers come round, inspect and make their offers according to the condition of the goods and their own urgency or requirements. The sale is effected in case the price is acceptable to the owner who may have brought it for sale and who may be present, or if the society has the member's authority if he is not present, and can use its discretion within any limits of price fixed by the member. No special work is done and the society merely substitutes itself for the individual tradesman or broker.

In the case of societies of a higher type, there is both grading of produce and sale by auction, which may take

place daily or at intervals, on days which may be well advertised beforehand among prospective buyers. Grading may be merely by sizes, as in the case of fruits, eggs, potatoes, etc., which is a simple process and can be attended to merely by hand or by simple mechanical means. Other features like freshness, freedom from outward blemishes also receive attention in such grading. Very often such grading is done only by the retail stall-keepers, street vendors and such small tradesmen, and it is also an unfortunate circumstance that many wholesale buyers do not much care to buy graded produce and it therefore does not pay to incur the expenditure of grading. Nevertheless it has been found that grading pays in the long run, and a society can easily establish a name and a definite place in the market on that account, which will prove a valuable asset. Even at present it has been found that sale in graded produce as against sale in ungraded bulk is profitable as will be seen presently.

Grading in (1) *Cotton.*—In the case of several important products the grading is rather elaborate, and it may be interesting to refer to some of these. Thus in the case of cotton, grading (of kappas) in any one variety may be according to the ginning percentage and cleanliness. In the Gadag Cotton Sale Society, selling D.A. cotton, an elaborate classification based on both these factors is adopted. In respect of cleanliness, kappas is classed as A 1, A 2, B 1, B 2, etc., in the descending order, and in respect of ginning percentage into five classes, *viz.*, 34 and above, between 33·9 and 33, between 32·9 and 32, between 32 and 31·6 and the last 31·5 and 31. The two factors are combined and the cotton classified into Spl. A, Spl. I, II, and III, qualities below this class, being rejected and excluded from the auction.

(2) *Cigarette tobacco.*—In the case of cigarette tobacco (Virginia, Harrison's Special) the cured leaf is sorted and classified before being put up for sale. This classification is also elaborate and is based upon the colour of the leaf. A uniform yellow tint ranks highest; any green tint is a

serious flaw, as is likewise sponging or brown spots. Based on these, nine classes are adopted by the Mysore Tobacco Co., which range from the bright uniform yellow of Grade I, to the last class called 'dark green' which is green all over without even patches of yellow.

(3) *Arecanuts.*—In the arecanut trade of the Mysore malnad, many grades are recognised and have definite trade names; these are based upon the shape, size, colour, and correct degree of ripeness (of which the former are indications). *Rajalu*, *Feeton*, *Chikni*, *Bette*, *Gotu* being the local names of the grades. The bulk lot may be broadly sorted or minutely sorted into many grades, and the trade fixes the proportion of some of the latter in each of the former.

(4) *Coffee.*—In the case of coffee also there are many grades recognised, such as 'Extra bold,' 'Plantation A, B,' these three being based on the size of the beans, in the descending order; 'Peaberry' are round beans and rank highest, while 'Triage or broken bits' form the lowest class.

(5) *Sugar.*—White sugar has its own classes, recognised internationally, which are based on the colour or degree of whiteness, and the size of the grains in granular or crystal sugar and merely on the colour in soft or crushed sugar. The so-called Dutch Standard (all denoted by numbers) are internationally known, but in India the system has been adapted to local conditions and the I.S.S. (Indian Sugar Syndicate) has fixed 17 different grades, in which both factors are combined; some factories have their own grades also designated by special names or symbols.

The Agmark grades.—As part of the improvements in marketing recommended by the Marketing (Agricultural) Department of the Government, certain standard grades have been fixed for a number of different kinds of produce, and goods conforming to these standards can be stamped with the designation AGMARK on them and vended under that title, which to the trade is a well-recognised quality. The measure has received legislative sanction also under the Agricultural Produce (Grading and Marketing) Act of

1937. Standards have already been prescribed for several articles like fruits, vegetables, eggs, dairy produce (ghee), tobacco, coffee, hides and skins, cotton, rice and so on. Grading stations have been opened for most of these articles and packers authorised to sell under the mark can have their goods graded, packed and stamped. It has been reported that such grading and marketing has resulted in better returns than the marketing of ungraded produce. The higher returns have been as follows:—Oranges 5 per cent., apples 16·5 per cent., mangoes from 1·4 to 24·1 per cent., grapes 21 per cent., peaches 64 per cent., eggs 5 per cent., hides 2½ per cent., ghee 8 per cent.

Marketing under the AGMARK grade specifications has been considered one of the most important means of obtaining better prices for the producer and it should be the aim of produce selling societies wherever conditions are suitable to adopt the system. This cannot be very difficult, as the points to be attended to are more or less familiar ones. As an illustration of the requirements, we give below the grade specifications (AGMARK) for two products:—

(1) *Jaggery.*—Jaggery (cane) (*a*) shall be prepared exclusively from the clarified juice of the sugarcane; (*b*) shall be prepared in solid forms of the......shape; firm consistency, not sticky or plastic, those containing less than 4 per cent. moisture being classed as hard; (*c*) shall be reasonably free from extraneous matter, etc., the combined total of which shall be less than 1 per cent. in weight; (*d*) shall be dried to such an extent as reasonably to maintain its colour, consistency and weight; (*e*) shall bear no signs of superficial sweat or mould, *i.e.*, it should be in good condition; (*f*) shall be sweet to taste and not possess sour, salty or other objectionable flavour. In addition to these general characteristics, special characteristics relate to colour and texture; according to which there are five grades, the shades being according to certain standard tints, and the texture according to the granular structure.

2. *Grapes.*—There are several grades, each of which of course will have to be packed by itself entirely, of which the following will serve as a specimen: Kishmish Variety Grade (Special). Each bunch shall have a minimum length of 10 inches; a minimum weight of 10 oz.; shall be well-formed having its normal cylindrical shape tapering to a point, the main stem shall be covered with berries throughout its length; berries shall be reasonably uniform in size, half or more of the berries in any bunch at least ½ inch in diameter; at least a quarter of the berries shall show the normal amber colour of the variety; each bunch shall be reasonably free from blemish.

PROVINCIAL CO-OPERATIVE MARKETING SOCIETIES

Reference may now be made to the societies called Provincial Co-operative Marketing Societies. These are apex or central marketing organisations, which deal with producers' societies on the one hand and with consumers' societies on the other in a manner calculated to help both types of societies. They may arrange to buy or to find a profitable sale for the produce collected and made available for sale by primary produce selling societies, for the different kinds of produce referred to in the previous pages, the sale being arranged to be made to large consumers' societies preferably and in the first instance, or to the trade if necessary. They may arrange to secure produce for consumers' societies, either on a system of indents which may be pooled and complied with from the most advantageously situated producers' society or societies or comply with orders as they come in. They form a kind of channel for the flow of produce in large quantities and at wholesale rates, from the producers' end to the consumers' whether in the towns or villages.

It will be possible for them to purchase the requirements of agriculturists of many societies in the same way as primary societies purchase the requirements of all their individual members at wholesale rates. Such quantities made up of the total requirements of a large number of societies will

in the aggregate be so large that they could be bought at very advantageous wholesale rates. Where a graduated scale of prices is offered by large suppliers or manufacturers, they can secure articles at much lower prices than if the primary societies dealt with the firms directly themselves. In practice the advantage in the shape of these low prices is split and the primary societies take the larger share, so that the incentive to the latter to deal with the central society in preference to dealing direct with the supplier is made stronger. The central society stands in fact in the same relation to the primary societies as the latter do to their individual members, and the remarks made already concerning the loyalty and other features of the relationship between primary societies and individual members will apply almost entirely to that between the central society and the primaries.

In many cases if the central society is guaranteed the unfailing loyalty of the consumers' societies, it may be possible for the former to obtain a sole agency in many articles for the territory concerned and the very material gain accruing thereby can be passed on in a large measure to the consumers' societies, which cannot secure such a big advantage under any other circumstances. In this manner many of the agricultural requisites, like manures, implements and tools, spray materials and so on, or consumer goods like clothing, soaps, oils and other stores can be secured at very low rates by the consumers' societies. In fact the central society can under favourable conditions develop into large central wholesale emporium for the supply of goods for a large number of what are called chain stores, which may be linked to them, much to the advantage of the consumer.

Their role in helping producers' societies will grow in importance only in proportion to the number of primary producers' societies which may come into existence and indeed will go hand in hand with such development. Their status as central institutions will enable them to be in close touch with outside markets and price trends, and such knowledge can be made use of in directing or canalising the

products of the societies into the most profitable markets. At present however all kinds of agricultural products are so much in demand and so high priced that the market is really a sellers' market, with hordes of competing and unsatisfied buyers; the assistance of central marketing institutions is therefore not felt so neceessary as it might otherwise be. The Government control being exercised at present also effectively closes this field to them as a sphere of operations. Nevertheless even under present conditions there is scope for such help though it may not be eagerly sought.

It may be possible eventually to make use of these central societies as licensed warehousemen, for particular commodities, when the necessary legislation is passed and the facilities for safe and adequate storage are made available to them.

It may be found that it is very difficult for them to play the role of god-father to both producers' and consumers' societies simultaneously, because the latter clamour for a lowering of prices while the former are after higher prices. Despite difficulties of this and other kinds, in practice, they have been able to render very material assistance to both.

A remarkable instance in India of such a provincial marketing organisation intended to assist both producers' and consumers' societies is the Co-operative Development and Marketing Federation in Uttar Pradesh. Its most noteworthy activity has related so far to the wholesale supply of commodities to consumers' societies such as sugar, cloth, foodstuffs, etc., and as regards agriculturists' requirements, oilcakes, iron implements and seeds. This side of the business is of vast magnitude and spread over the whole province and of the annual value of over Rs. 5 crores (1949–50). On the producers' side however, it is significant that the Federation has not been able to make any headway, due, it is stated, to the Government controls exercised of course with the object of checking too high prices and to ensure equitable distribution to all,—a remark which applies to all such central marketing organisations.

CHAPTER V

CO-OPERATION IN AGRICULTURAL OPERATIONS

A very promising field for co-operative effort is afforded by the various agricultural operations concerned with the cultivation of the crop and with preparing it for the market. These operations cover a wide range of important agricultural work, such as the construction of small irrigation tanks, the bunding or embanking against erosion, the digging of spring irrigation canals, the deepening and repairs and maintenance of both, the lifting of irrigation water from wells, tanks or canals, the ploughing of the land, sowing, weeding, harvesting and threshing, the protection of the crops by fencing and watching, the milling of sugarcane, and many other similar operations pertaining to particular crops. Some operations are impossible of being carried out by individual agency, such as those relating to irrigation, others take too long if attempted individually, and require therefore a large number of hands, and are done cheaper by mutual co-operation than by paid labour, and still others relate to what may be called common property, more or less in which every one is concerned. Co-operative work in all these cases is therefore either a necessity and the only method possible or one which is cheaper and more advantageous than individual effort. This has been fully understood and realised so well by rural communities that from time immemorial co-operation has been the usual method and many such practices have become customary in the villages. The details of the methods are well worked out and established and each participating man or family has his duties and rights well defined. Though there are no statutory obligations or written rules for the enforcement of these duties and rights, as may be the case in a modern co-operative society, still in actual practice there is a stricter

enforcement of and a more loyal adherence to the unwritten rules than may prevail in many a society.

Although the cohesion of the olden days has become loose and communal injunctions have lost much of their binding force, still a good many of these old practices persist, whether it be on special occasions such as repairing a breach or staying a flood or the usual annual repairs to tanks or channels,when each man turns out with a spade and basket to carry out his allotted work. Cases are often reported where the villagers of two or three villages have combined together and executed such repair work within as many weeks or even days, as it would have taken months, if it had to be let out on contract and paid labour employed, as would be the case, had it been left to the Government department to carry out. When the water in the tank begins to give out and goes down below sluice level every man lends a hand in lifting the water to sluice level, by working his allotted time at the picotah or swing basket used for the purpose. In the case of irrigation from river bed channels cut in the dry river beds of certain rivers (*e.g.*, the Uttara Pennakini), the work of keeping the sides and bed from being choked with sand in order to obtain a steady and full flow, is almost a daily operation at which every man using the water has to contribute his quota of labour. At ploughing time mutual help is the rule; field after field is worked in common and as many as a dozen teams may be seen working in a single field. Fencing whether for sugarcane fields or for permanent gardens like arecanut gardens is also undertaken in common and all owners work together irrespective of whose field or garden it may enclose and exercise great care because a gap wherever it may arise means a danger to all. Common threshing floors are usual, stacks being put up all around, and at threshing time the cattle of all the men take turns at trampling out the grain, irrespective of whose grain it may be. At sugarcane milling time, all the growers work together, cutting, carting and milling the canes of each man in a definite order. The spirit of "each for all and all for

each" can be seen exhibited nowhere more conspicuously than in these agricultural operations. It is really a case of collective farming within a limited sector of operations. It will greatly increase the benefit from such co-operative action if it can be harnessed to some of the newer methods involving the use of machinery so as to get through the work quickly, at less cost and lesser bodily discomfort or strain. Many such can be introduced even under present conditions, and we shall now deal with the scope and organisation of co-operative societies for this purpose.

THE NEED FOR LABOUR-SAVING MACHINERY

The introduction of modern machinery in Indian agriculture is a subject on which there is a somewhat sharp difference of opinion, many people holding that it is neither desirable nor even practicable under present conditions. It will be well therefore to examine this question briefly before taking up the particular operations for which machinery may be bought and used co-operatively.

The main advantage in the use of machinery is the speeding up of the operations, that is to say, their ability to accomplish a great deal more work within a given time. This means in practice the finishing of the work in the proper time, which as every one knows is a very important point in agriculture. The most important operation of ploughing is subject to great delay, because the method is too slow to take advantage of the moist condition of the soil before it dries up, and it will be an obviously great advantage if speedier methods can be adopted. Other operations like threshing, winnowing, sugarcane milling, raising water for irrigation suffer from the same disability, being too slow and subject to unavoidable delays incidental to present methods. Many operations become both delayed and done in a less thorough manner than it need be, owing to these causes. For example, in many villages, the milling of cane, the threshing of dry land grains like ragi, the sowing of summer paddy, the planting of sugarcane, all synchronise

more or less, and on account of the slow methods one or other among them has to be unavoidably delayed however much the farmer may wish to avoid the delay.

Lift irrigation with the use of bullock *mhotes* or by ordinary picotahs is not only a laborious and back-breaking operation but can be carried on only for short stretches of time depending upon the strength or staying power of both bullocks and men. On the other hand, with pumps and motors or engines, there is no need for such interruption and if only water is plentiful, the work can go on for as long a time as may be desired. With present methods, even when the need for longer irrigation is great and however abundant the supply of water may be, the nature of the power, manual or bullock, sets an inexorable limit to the work which is possible.

In ploughing operations where deep ploughing for special crops like sugarcane, plantains, turmeric, etc., has to be done, or where hot weather ploughing in the black cotton soils when the ground is too hard, requiring four or five pairs of bullocks, tractor-drawn ploughs can do the work with greater ease, at less cost, and within a much shorter time than can be accomplished with bullock power. Even in ordinary ploughing, such machinery will be found far speedier and cheaper when used with the proper implements. This subject is however dealt with fully in a separate section (*vide* pages 92 *et. seq.*).

Other operations like ginning cotton, for instance, can be carried out not only more expeditiously and at less cost of labour, but in the case of some varieties like D.A. or Cambodia cotton, the large machine gins alone can be thought of because they cannot be ginned in the ordinary hand-operated roller gins. In the case of other operations like threshing and winnowing there is the additional advantage that they can be carried out indoors and independent of the weather, which will be a much appreciated feature.

Transport is another operation which benefits by mechanisation and as a matter of fact already a great deal of

transport by motor lorries of articles like grains of different kinds, sugarcane, sheaves of jowar for threshing, manures, both concentrated and cattle manure, and even straw, is very much in evidence. Many other farm operations such as sowing, weeding, harvesting, baling and so on can be mentioned as is very common in foreign countries, but under present methods of cropping many of these latter are unsuitable in India. Indeed much discrimination and caution are essential in the introduction of machinery in Indian agriculture and the scope and suitability have to be carefully examined before any should be decided upon. We have however said enough to show that there is scope nevertheless for machinery of certain kinds and shall refer to these and others in some detail under the respective operations for co-operative management. The point to be stressed is that the use of these machines will so speed up operations that they can be put through in time and to that extent make for better crops; they will enable a larger area being farmed, generally at lesser cost, but certainly with greater convenience and less physical strain. The last point is not to be belittled, for although hard toil is the lot of the farmer, an easing of the strain where it is possible to do so, will certainly result in greater efficiency.

It is urged against the introduction of machinery that it is likely to lead to rural unemployment and that unless alternative openings for labour are created by industrialisation, the course should not be adopted. It cannot be denied that machinery will, to a certain extent, displace human labour; this is indeed one of its chief merits but in practice such a contingency need not be feared. For a long time to come an all out A to Z mechanisation cannot be thought of in Indian farming and many operations like digging, application of manure, sowing, weeding, thinning, topping, harvesting, stacking, etc., will have to be attended to by human labour. It is also stated that there will be a large reduction in the number of bullocks needed and that such reduction in their number will mean a large unused surplus of straw

fodder and a shortage of cattle manure; but when it is remembered that our cattle are notoriously ill-fed and that fodder supply is generally unequal to the demand in the villages and further that dairy cattle will take the place of draft cattle in such cases of reduction due to mechanisation, neither a surplus or wastage of straw nor a shortage of cattle manure need be feared. On the other hand, it will mean better fed cattle and increased milk production.

It is also argued that holdings are very small and composed of many scattered fields and therefore many of these mechanical units will not be suitable. This condition is however fully taken note of when recommending the method which is through co-operation, so that units will be owned and used co-operatively, in all cases where individual ownership is ruled out. The main aim is to enable farmers small as they are to derive the advantages of mechanisation and co-operation opens out an ideal method of achieving this end.

As regards the danger of unemployment it need only be pointed out that considerable machinery is already in use in farming and no such danger has developed. Hundreds or even thousands of wells have been fitted with pumps and engines or electric motors, road transport is being rapidly mechanised, all the cotton is ginned in factories, and the rice likewise hulled in central hullers, sugarcane is largely milled in factories and jaggery making outfits also use power driven mills. Even in the home the grinding of ragi or wheat by the womenfolk by the tiresome domestic grinding mills has been given up and this age-old daily drudgery has been replaced by the centralised power driven mills; all these must have displaced very much more rural labour than can ever be feared by ploughing or threshing outfits on the scale that may be possible under present conditions. The fact is that just as it has happened in the case of many trades and crafts where machines have displaced men, the necessary adjustments will take place automatically, new openings and needs arising for the utilisation of such labour. Crop production requires speeding up all over the country and

the toiling producer of food requires greater efficiency and relief such as machinery can afford and it is strange that in this respect alone machines should be considered an evil.

It must also be pointed out that there is a strong body of opinion especially among actual farmers in the villages whether large or small that far from there being a surplus of labour there is chronic shortage of labour in the villages and that the fear of machinery leading to unemployment and so on is not well founded. In fact, a scheme was actually brought up for consideration in Mysore recently for the formation of a regular labour force from which men could be drawn wherever and whenever required for various agricultural purposes, whether it be for cultivating new land or helping in field operations on the existing farms themselves. The truth would appear to be that conditions vary so much from tract to tract, that neither a surplus of labour nor a dearth can therefore be of general application. The fact that there is always considerable migrant labour during particular seasons like time of transplanting, weeding, harvesting, and so on, only bears out this remark. That machinery will lead to serious rural unemployment cannot in any case apply all over the country.

Operations for Co-operative Undertaking:

I. Irrigation and Pumping Installations

We shall now deal with the particular operations which can with advantage be carried on with the employment of machinery, owned and used co-operatively. The foremost among such operations is irrigation. The paramount importance and need for irrigation in Indian agriculture hardly requires to be emphasised. As a factor in crop production it ranks foremost; in securing an assured crop free from the risks of uncertain and insufficient rainfall and in increasing the yield in a striking manner and as an incentive to heavy manuring and intensive cultivation its role is too well known to be specified. As one writer has said, "Irrigation is the Midas touch in Indian agriculture". From time immemorial

rulers, leaders of the people and rural communities have worked to construct irrigation works of many kinds; but however numerous, large and remarkable these works may be, they have all related to the harnessing of only surface waters, like dams across rivers or the impounding of valley flows by the construction of irrigation tanks. The utilisation of underground water by means of wells and water lifts has largely been due to individual effort and though in the aggregate this must be of vast magnitude, still only shallow wells or those of comparatively small depths have been utilised and in quantities such as only manual or bullock labour with their limited capacity could handle.

Irrigation sources.—The scope for the use of pumping machinery lies (1) in tapping underground water at much greater depths; (2) where perennial or practically inexhaustible supplies exist, whether at small or great depths; (3) the raising of surface water from greater depths than can be managed by bullock labour, such as installations on the banks of rivers for raising water for irrigating lands on the bank; (4) where surface water as in rivers and lakes may be abundant and can be pumped up in such large quantities as to irrigate large areas on the banks, even though the lift may not be too great for bullock power. In all these cases it is possible to instal and work large-scale pumping machinery capable of irrigating large areas of land on account of the abundance of the water available, and in fact only large scale machinery is used in all such cases. Such machinery is suitable obviously for the use of either single large landholders, or for being owned by a capitalist and used by a number of small landholders or for being owned and used co-operatively by societies composed of these landholders themselves.

1. As is well known well water for irrigation purposes is seldom lifted from greater depths than 15 or 20 feet, even when bullock *mhotes* are used while with manual labour outfits it is much less. A water level of about 30 ft. in wells may be said very deep requiring the use of two pairs of

bullocks, one pair pulling the bucket up and walking sharply down while the other pair walks leisurely up the easier ramp to take its place at the top. In very exceptional cases, water may be lifted from 35 feet but such wells are rare and will need the use of three pairs of bullocks. The work is in all cases very hard and exhausting and *mhote* bullocks have to be specially strong and well fed. Even then the period of time during which a pair can work is strictly limited and though there may be plenty of water in the well it cannot be made use of for irrigation. The area which can be put under irrigated cultivation is therefore small, usually does not exceed three acres. Pumping machinery is obviously not subject to this drawback and will have to be rescrted to for such situation, provided of course the supply is sufficient for being worked over a long period.

2. A supply can be augmented only by a deepening of these wells or by the digging or boring of deep wells, and in all these cases, pumping machinery alone can meet the situation. There is very great scope in many parts of the country for the putting down of deep wells and practically every state in India owns special deep well sinking outfits for the putting down of tube wells, the drilling of bore holes through solid rock, either for special bore wells or for bore holes in ordinary open wells. In the U.P. tube wells form a special feature, they are numerous and many are very large, irrigating fifty or more acres each. The Indo-Gangetic alluvium which extends to immense depths makes the conditions eminently suitable for such wells. In parts of the Madras State in some of the east coast districts Artesian supplies are available at great depths and many wells of this type have been put down and abundant supplies secured, there being in such wells no need for any lifting of the water at all. In many parts of the country however even though Artesian supplies cannot be had, abundant supplies can be tapped at great depths, and a large number of successful bore wells have been sunk, capable of irrigating large areas and suitable for pumping installations owned and worked co-operatively.

(*a*)

(*b*)

River bank pumping installation of the kind referred to in the text—Water being pumped by electrically driven pumps from the pool (*a*) into a high level cistern on the bank (*b*), from which 150 acres are irrigated by gravity flow

— *Photo by courtesy of the Director of Agriculture in Mysore.*

3. There are again many places where large supplies of surface water are available which can be made use of for large areas of land situated at a higher level, either immediately on the bank or farther off. During the flood season nearly every river affords scope for such use on the land situated on their banks which may not be served by canals. After the flood season is over, there are along the course of many rivers favoured spots which are deep pools where water remains permanently. The banks adjoining such sections of these rivers can be profitably put under irrigation by the installation of pumping machinery. The cultivation of *lankas* and similar island stretches of land in some of the rivers also affords scope. In fact, the scope for lift irrigation of one kind or another may be said to be almost unlimited, as is being learnt now that the Governments of all States are actively encouraging the sinking of wells and lift irrigation and the installation of pumping machinery as part of the "grow more food" campaign. It may be noted in passing that this development will remain the most permanent and beneficent legacy of this many-sided campaign.

Pumping installations.—The machinery to be installed, its kind, size, capacity both of the motor and of the pump, the site and manner of installation are matters on which the advice of engineers will have to be obtained. In view of the extensive electrification of the rural parts now in progress and which before long may be expected to cover the entire country, the use of electricity as the motive power will be found the most convenient and practical. Oil engines have also come in largely for use, which run on cheap crude oil and this will be the most suitable power where electricity is not laid on. Of pumps, many different types have come in and a large variety suited to particular conditions is available to select from. Though stationary units will be the ones for most situations, portable units consisting of both oil engine and pump or electric motor and pump to be operated from electric connections at the different wells or other water sources, can also be used where pumping has to be done

for all the members from their own individual wells and not from a common well or other source. Where wells have only small supplies and cannot stand pumping except for small periods, such portable outfits will be able to serve a number of them usefully.

Though ordinarily large vertical centrifugal pumps will be the type selected for most places, horizontal submerged centrifugal pumps may be advisable in exceptional cases. In many situations arrangements will have to be made for adjusting or varying the location of the machinery according to the varying heights of the water in the wells. Deep well pumps of the plunger type suitable for such wells, and for deep bore wells, of more than one make are also available and are installed by the well-boring agency itself. Anyhow these important matters will have to be carefully gone into in each case and determined by competent engineers. It is also of fundamental importance that the irrigation source selected, either as such or after improvements like deepening, widening or other means, will supply sufficient water to stand the pumping proposed, and be capable of serving a large number of landowners, a requirement which will be taken due note of by engineers when deciding the capacity of the outfit to be installed. The point to note however is that co-operative lift irrigation societies can be formed and suitable machinery installed so as to cover a variety of circumstances, so that good irrigation sources may in that way be made use of fully and by as many farmers as possible.

Co-operative utilisation.—The utilisation through the agency of a co-operative society secures to the participants many other advantages which will not accrue to any one individually. This relates mainly to the securing of adequate finance both at the start and later for expansion, renewals and repairs and so on, besides various concessions which are shown to co-operative societies.

Lift irrigation societies have been organised in many States and people have been familiarised with the methods. Moreover some of the difficulties of the past no longer exist

and the conditions are more favourable. People have become more machine-minded and due largely to the increasing vogue of motor traffic, the use of internal combustion engines in many industrial establishments, and of electric installations, there is a greater degree of practical knowledge of their mechanism and of repairs, among many people, than it used to be in the past.

There is however room for friction among the human elements in these pumping installations, against which provision will have to be made and the pitfalls of the past guarded against. Differences may arise and generally do arise in arranging the turns and the duration of pumping service and of irrigation to the various members, which may lead to serious discontent, and the secession of the aggrieved members, and perhaps to the failure of the society itself. The bye-laws of the society should fix this essential service on definite lines which should command the approval of all the members, so that there may be no misunderstandings later on nor any domination by any one influential member over the rights of a humbler one. Membership will have to be confined to the owners of land in the immediate vicinity of the well or other irrigation source, so as to make the supply easy and efficient and also to avoid dissatisfaction and quarrels. This will have to be reckoned with and specially provided against, because " water is so vital a thing to him (the ryot) that he is not prepared to leave his interest in the matter to the decision of his fellows" (Royal Commission Report). Fees may be fixed on the basis of the time taken for the service, the extent of land irrigated or the quantity of water used according to the circumstances and the wishes of the general body of members. The society in this respect merely takes the place of a capitalist owner of the installation, who renders service on a particular schedule of charges, with the difference that at the end of the year, the profits remaining after all expenses have been paid become the property of the members themselves. Most departments of co-operation in India have model bye-laws drawn up for

lift irrigation and other types of societies and these afford much guidance and can be adopted with any modifications which may be necessary under differing local conditions. It may be added that few lines of co-operative activity are appreciated more than those formed for the supply of irrigation water, be it of surface water by ordinary methods of bunding, storage or diversion or underground water by lifting with pumps. The reasons are obvious and the scope wherever it may exist deserves to be fully utilised in this manner by co-operative societies.

II. The Co-operative Use of Machinery for Ploughing and Other Tillage Operations

We have already explained that machinery can be used for many purposes connected with agriculture, such as lifting water, milling cane, transport of materials and so on, including the ploughing of the fields. It is however in connection with the last, *viz.*, ploughing, that the term mechanisation has come to be used pointedly and that employment of machinery to be commented upon critically, if not adversely, as of doubtful advantage at best and as seriously prejudicial generally. The subject of tractor ploughing and allied operations and the scope for their employment therefore deserves to be gone into in some detail and their suitability for co-operative ownership and use explained.

The breaking up of the ground whether by ploughing or digging is the basic operation in agriculture, and whatever may be the crop grown whether field crops or plantation crops, this breaking up is indispensable. It is very slow and arduous work both on men and bullocks and where digging is attempted many times more so. The work is possible only when the soil is sufficiently moist and has therefore to be carried out within the period that the soil condition is favourable, and this period is often very short. This is an inexorable limitation and greatly reduces the area which can be farmed with an ordinary pair of bullocks. Much land is in practice ploughed either insufficiently or only a

portion is cultivated in the early season and the remainder left over and taken up, if possible, at a later season for some minor crops. Ploughing is also the operation for which the most costly equipment on the farm, *viz.*, bullocks have to be kept (excluding water lifting by *mhotes*) and usually more than half the work for the bullocks in the year relates to ploughing. Ploughing is also the most taxing form of work for the bullocks and special feeding and care are required at the season to keep them strong enough for the strain. The ploughing season is usually followed by a period of rest or very light work, but for which respite they will seriously suffer. Some forms of ploughing such as for sugarcane, or on the black cotton soils are hard work, and the deep hot weather ploughing on black cotton fields for the eradication of *hariali* grass, is impossible for one pair and generally four or five pairs are hitched. It is for the sake of ploughing that strong and large bullocks have to be kept, the other forms of tillage being easy enough for cheap small-sized bullocks and even for cows.

If work can be speeded up so as to cover a man's full holding within the time that the soil is in the fittest condition, and if the bullocks can be relieved of all the very hard work, and the need for costly bullocks thereby avoided, it will obviously mean a great gain from the point of view of better production and lesser cost. How the use of machinery like tractors and ploughs with other tractor implements like disc harrows and cultivators will successfully achieve this end may now be briefly explained.

Ploughing in the red loamy soils.—The ordinary country ploughs worked on the red loamy soils when the soil is well softened by good rains will work to a depth of four to five inches; very often, the depth will be only three or four inches, although the ploughed field may appear as though the depth were more. If however the stirred up soil is moved aside, the actual depth will be seen, which will be found to be surprisingly shallow. About five inches of depth may be taken as the depth finally attained. The peculiar shape of

the working part of the country plough is such that the furrow is V-shaped and consequently the furrows alternate with unploughed ridges, which have to be broken up by repeated ploughings. Three or four ploughings may be necessary before the entire surface of the soil is broken up and the field can be said to be fully ploughed.

An ordinary first ploughing may not be more than half an acre per day with one pair of bullocks and an acre may take two days or three, even with this kind of imperfect ploughing. Second and third ploughings are of course less difficult and quite half an acre or more may be done in a day. Usually not less than six days of ploughing will be required to fully plough an acre to the required degree of tilth. This is the commonest or most general kind of ploughing, with the country plough.

With an outfit consisting of a tractor and a three furrow plough of the mouldboard type, the land (when in suitable condition) can be ploughed quite six inches or more in depth and an area of almost an acre can be ploughed per hour. The outfit can be worked as long as may be desired during the day, as there is no question of exhaustion or strain concerned as in the case of bullocks, ploughing time being limited only by daylight. In emergencies (as was done in the case of war-time crop production in England), such ploughing has been carried on even after sunset, the field being lighted up by powerful headlights on the tractors. Without considering such abnormal conditions, an eight hour work per day is quite usual and an area of quite six acres can therefore be ploughed per day. Such ploughing will moreover, it may be particularly noted, be quite thorough, as the nature (or shape) of the working part or plough bottom is such that every inch of soil is ploughed up in one operation, in marked contrast with the country plough and its repeated workings. Generally such deep ploughing as the above-mentioned six inches or more will not be necessary and a depth of four to five inches which is the depth usual with the country plough can be accomplished by means of heavy

disc harrows or harrow ploughs. Instead of the three furrow mouldboard ploughs mentioned above these implements can be used with advantage. They can work usually a width of six feet according to their size and can cover something like ten to twelve acres per day. It will be possible in most cases to obtain the necessary depth of ploughing with these implements alone. So that on these soils which form the bulk of our cultivated areas quite ten or twelve acres can be broken up to the degree which an ordinary plough brings about in a single day. There are large areas on which the soils are of a less compact nature, the somewhat light loams which are more easy of ploughing and on such areas the extent of land ploughed per day will be considerably more. When it is remembered that even after a good soaking rain, the soil may not remain moist enough for ploughing for more than a week the great advantage of this quick ploughing will be realised. With a well organised and efficient agency the lands belonging to several villages can be ploughed quite satisfactorily, within the two or three good showers which prevail normally prior to the sowing of the main monsoon crops, making it possible to take up the sowing of the whole area at the correct time. Once the ploughing work which is the most difficult operation is carried out by tractors, the lighter work of harrowing, levelling, mixing manure, sowing, etc., can be done with great ease by bullocks, although, if preferred, even these lighter operations can be carried out by appropriate tractor drawn implements like disc harrows, cultivators, and lever harrows.

Ploughing on the black cotton soils: (*a*) *Annual ploughing.*—On the black cotton soils, the scope for the use of tractor ploughs consists not only of the annual ploughing, or if the ploughing is dispensed with, a deep harrowing, but also of the deep hot weather ploughing carried out once in four or five years to get rid of *hariali* grass. The ordinary ploughing is itself hard work on these soils and the special hot weather ploughing is still more so. Larger ploughs are needed and strong and heavy bullocks are necessary and

even then the work is very slow. The advantage of tractor implements in respect of speedier work as explained in the case of red soils is even more in the case of the black cotton soils. In view of the difficult nature of the work and of the peculiarity of the black cotton soil in possessing a dry crumbled surface which is very easy to stir with harrows, the ploughing is sometimes dispensed with and a good harrowing with *kuntes* or *bakhars* is deemed sufficient and is generally adopted. This harrowing is only a poor substitute for ploughing and will well bear being replaced by ploughing proper, were it not that such ploughing with bullock ploughs is both difficult and slow. Black cotton soil holdings are generally much larger and fields are strikingly so, going up to even ten acres. Speedy work is therefore much more necessary on these soils than in the case of red soil holdings and the scope for the use of tractor ploughs greater. The black cotton soil tracts are also remarkably flat in surface and this feature is an additional favourable condition for tractor ploughing.

(*b*) *Special hot weather ploughing.*—The hot weather ploughing is special to the black cotton soil fields. The deep rooted *hariali* grass is a common and persistent weed on this soil; it spreads by rooting as it spreads and is very much favoured by the depth and fertility of this kind of soil. The annual ploughing or other tillage has little effect in eradicating it and on the other hand may favour its further spread. The grass is highly injurious to the cotton crop on which it almost acts as a poison, in addition to covering ground which would otherwise be taken up by cotton. The only way in which it could be got rid of, is by working the soil deep in the hot weather and allowing the roots to dry and perish during the summer months. Thorough work consists in digging the soil about 18 inches deep and exposing the roots; this is however a very slow and costly process and only a small fraction of man's holding can be handled in any one year. A substitute method which has the much desired merit of speeding up the work (which

has now become all but obsolete) is the use of very heavy wooden ploughs capable of ploughing a foot deep and requiring the use of five or six pairs of strong bullocks. In recent years the wooden plough has given place to large iron ploughs of the mouldboard type, which also require about the same number of bullocks. This method is also slow and costly although less so than the work of digging.

These conditions are just those where the use of the tractor drawn ploughs will be found a great advantage over the present methods. As a matter of fact the use of such mechanical appliances has from the beginning been thought of and attempted only on these soils for this particular kind of work. Many kinds of outfits have been tried in the past such as steam engines and cable drawn ploughs, steam engines for direct traction, and kerosene and crude oil engines for direct traction comprising many makes. None of these have been always satisfactory and for one reason or other (into which it is needless to go here) they have been found unsuitable. Much knowledge has however been gained and outfits at the present time may be said to meet the conditions very much better. Tractors are heavy and powerful enough, they run on comparatively cheap fuel, which is obtainable more easily, ploughs are more sturdy and servicing by means of repairs or renewal with spare parts more efficient. The Indian market is also being developed and exploited and even the local manufacture of tractors has already begun, which should make readily available not only tractors but also spare parts and renewals promptly. One tractor company has already been so enterprising as to run an aeroplane service for supplying spare parts, immediately on receipt of a call. These developments may be said to remove one great and almost insuperable obstacle in the way of introducing tractor machinery. The black cotton soils of India extend in the aggregate over immense stretches of country and the scope for these outfits should be considered very great.

Ploughing for special crops.—The third operation which affords scope for tractor ploughs is the deep ploughing

required for special crops like sugarcane, plantains, turmeric, betel leaves and so on. For these crops the field has to be prepared by deep ploughing or more often and where possible by deep digging by manual labour. The soils are usually of the heavier type being rich and fertile clay loams. The crops moreover follow after one or more crops of rice and this sequence leaves the soil somewhat more difficult to plough than it might be otherwise. After the removal of these special crops, the preparation of the stubble field for the succeeding crop of rice is very difficult; the large ridges have to be broken up, the clumps of roots freed and the trenches or deep furrows filled and levelled before the field surface can be called fit for rice. This work is mostly done by digging with manual labour or deep ploughing with heavy ploughs but both are slow and hard work. Ploughing with a tractor and a three furrow plough will greatly facilitate the work and the field can be worked to a depth of about 9 inches or 10 inches and an area of about four acres can be covered in a day.

All these different operations under these various conditions of soil and cropping are such, therefore, that the use of tractor ploughs will be a great advantage, whether it be for the comparatively large landholder or a combination of several small farmers among whom the area may be parcelled out for cultivation.

Tractor ploughing for virgin land.—The fourth operation affording scope for the use of tractor ploughs is the bringing into cultivation of new land. The difficulty of this work and its slowness are well known; both speed and difficulty depend upon the nature of the soil, the configuration of the surface and the type and density of the vegetation thereon. It may not be possible to use a tractor plough with advantage, if the area is much covered with tree growth or even with moderate small trees or bush vegetation, nor when there has been much erosion and the surface is cut up by gullies or is very uneven with numerous mounds, pits and similar features. These will require very extensive manual labour

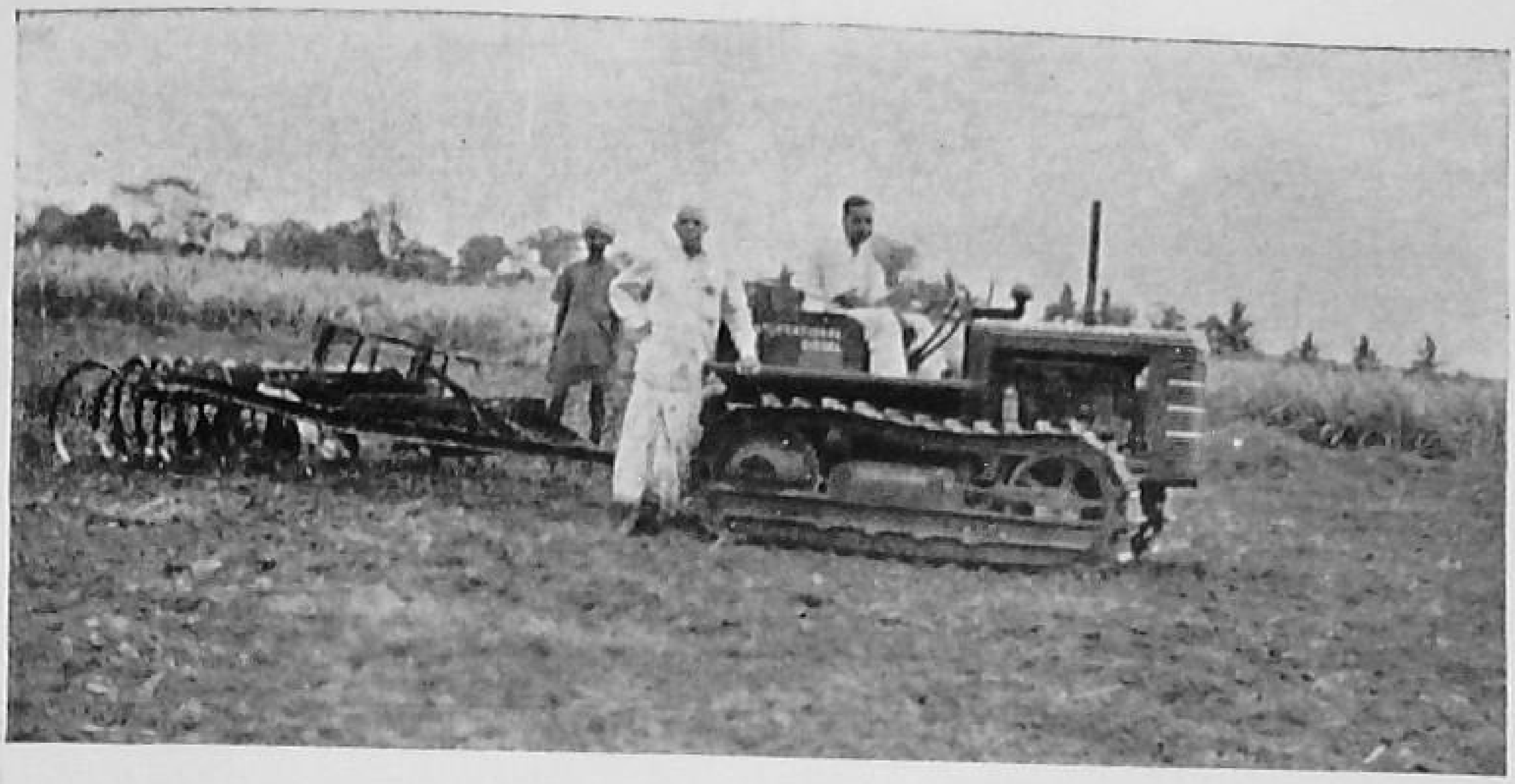
or machinery of a different kind such as bull-dozers for example. These latter will accomplish surprisingly and spectacularly remarkable work, uprooting and removing fair sized trees, shearing off heavy scrub jungle, shifting and shovelling mounds into gullies, and indeed a general clearing up preliminary to putting the plough on, in the course of as many days as months which may be taken by large gangs of men. The author had the experience of getting a forest area prepared in this manner and the quickness and thoroughness of the work, which included the removal of many fair sized trees, was such as could hardly be believed. The fact is mentioned not in the belief that any co-operative society of the kind we are used to can ever hope to go in for any outfit of this kind but to point out that large reclamation societies proposing to invest in tractors and ploughs should bear this great mechanical aid in mind, so that where one may be procurable for hire the same should be availed of as a preparatory operation to that of their own tractor ploughs. Sometimes, and perhaps more generally, the surface of the tract to be opened up may not be of this difficult character, but may be flat or just covered with deep rooted tussock grasses, which will have to be dug out. Such land lends itself admirably to be handled by tractor drawn ploughs and other tillage implements, in somewhat the same manner as the hot weather ploughing on black cotton soils, with the added feature of having to tear through these clumps of coarse grasses.

Scope for co-operative use.—Even an ordinary outfit comprising a tractor and a set of implements like ploughs, cultivators and harrows is a costly affair, and although not beyond the means of a few large agriculturists here and there, are suitable only for a large group of agriculturists, preferably of several contiguous villages. As already stated the class of large landholders has been or being abolished all over India and the land parcelled out in small holdings of a few acres each among a class of innumerable small holders, so that the case is made only stronger for the ownership of

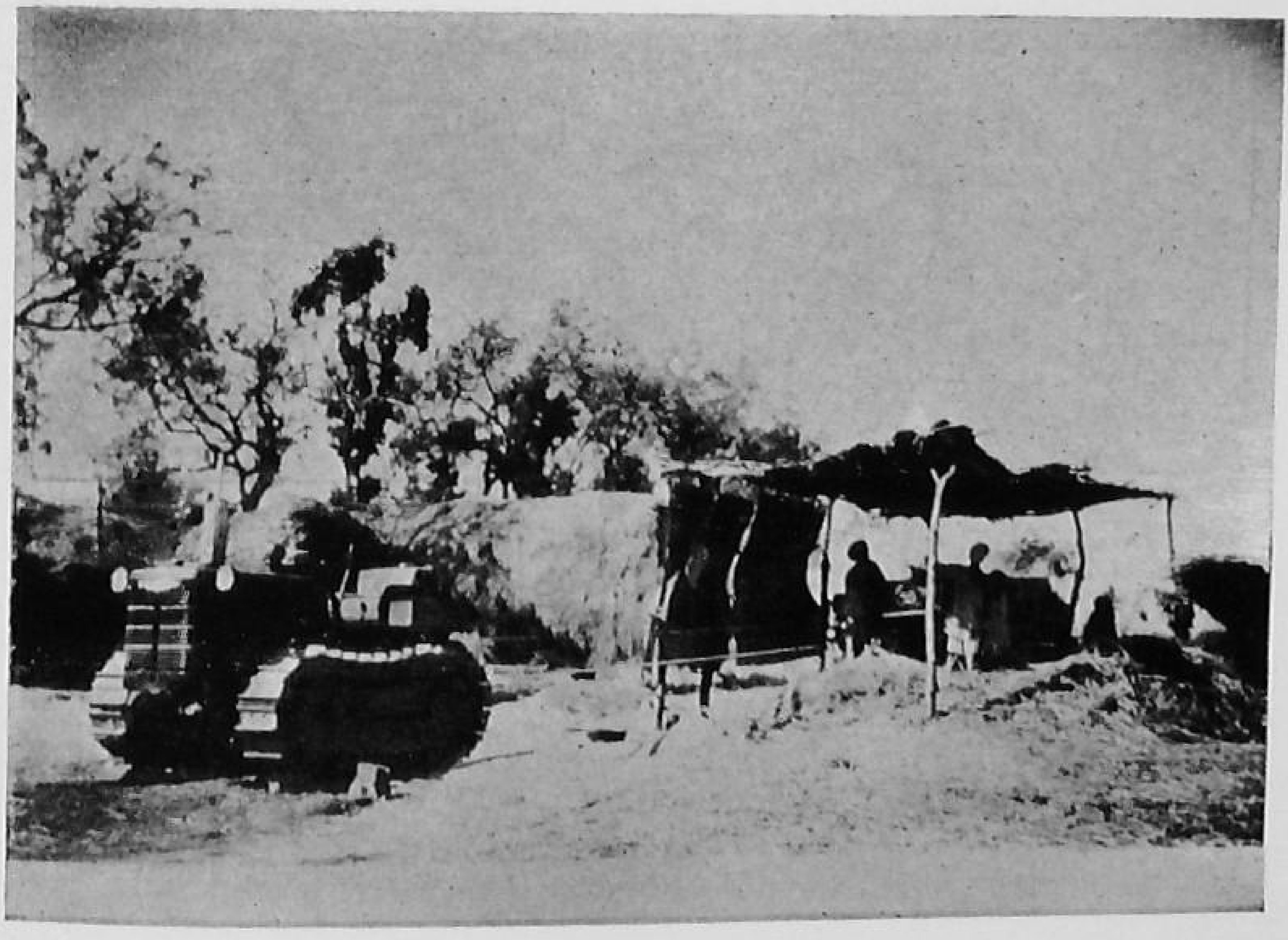
such costly machinery by co-operative societies composed of such holders.

It is moreover not merely a question of cost which has to be considered, but the period during which the machinery could be used. As in the case of all types of machinery, the longer the period during which it works the larger is the return on the capital invested, and *vice versa*; if the period is too short it may lead to actual loss. If the outfit is purchased for use in the black cotton soil tract it may have a fairly long working season comprising about four months of hot weather ploughing and about two months or ordinary light ploughing for the *mungar* crops and another month for the *hingar* crops. On the red loam or other soils of the ordinary type the period may not be so long, as there is no hot weather ploughing but only ploughing after the rainy season commences for the *mungar* or main crops and a ploughing in the late season for the *hingar* crops. It must be pointed out however that these red soils are greatly benefited if they can be ploughed as soon as the harvest is over. Such ploughing almost amounts to a form of manuring for the succeeding crop, the ploughed condition of the soil protects the soil moisture from much loss in the summer months and above all makes it possible to raise two crops in the year on the same land, *viz.*, an early *mungar* crop like short season groundnuts, gingelly, black gram, green gram, fodder jola, etc., which will be harvested in time for a second crop in the same year, like horse gram, niger, etc. This ploughing is not attempted at all or attempted only to a small extent at present, because after harvest, the soil becomes too hard for being ploughed by bullock power. The tractor will get over this difficulty and the work can be taken up by every one. In that case the ploughing season on this type of soil also can be prolonged.

We have explained more or less fully the scope which exists at present for the use of this kind of machinery. The actual working will be a case of efficient organisation. It is imperative that the agency should possess capable and



A tractor and cultivating outfit suitable for co-operative use.



The same tractor working a Threshing Machine, threshing ragi.

[Both outfits being in use on the Uragahalli Estate of Sri. N. Krishna Iyengar, B.A.]

— *Photo by Author.*

Ginnery and Godowns of the Arsikere Cotton Marketing Co-operative Society, Mysore State.

— *Photo by courtesy of the Director of Agriculture in Mysore.*

experienced operators, should be equipped with facilities for prompt repairs and renewals and should carry out the work on a plan and programme of service agreed upon by the members. Much ability and responsibility will be required on the part of the committee of management in the custody and care of the outfit, in the allotment of work, the collection of the charges, in foreseeing requirements and providing them in good time so as to avoid stoppages and in the supervision and general management of the whole service. It is very probable that considerable assistance may be available from the various firms who are interested in the development of this work, as they envisage a large field for their operation in this country, and from the Government, also as part of their responsibility now that the class of large landholders has given place to small holders, under the new Government policy and legislation. Already quite a number of enterprising landholders who have invested in such outfits for use on their own lands are doing a certain amount of custom ploughing and other work for others, while capitalists have also come into the field to do custom ploughing as a business. Societies can likewise enter the same field with greater advantage to their members; the help which they can secure in various directions by virtue of their being co-operative societies will make it easier for them, while in the organisation of the work the experience of these individual pioneers will afford much helpful guidance.

III. Co-operative Societies for the Ginning of Cotton

The ginning of cotton is another operation which affords scope for the profitable use of machinery by co-operative societies in the cotton growing tracts. Until about fifty years ago, most of the cotton used to be ginned at home by the growers themselves in the old domestic hand gins, or by a large grower who employed a large labour force to gin his own produce and that of his neighbours which he bought. The work was performed nearly always by women

whether paid as in the case of the large grower or as one of the duties of their own household. Such ginning had the great advantage firstly, that it saved the hauling of kappas (unginned cotton) to the market, such saving amounting to between 60 to 75 per cent. in weight, and secondly, that it left the seed in the villages themselves, both for sowing purposes and to a much larger extent for cattle feed. It also guaranteed purity of seed to nearly every one in the village and particularly those who might wish to obtain seed from their own produce. With the advent of large central ginneries, and cotton markets and the extension in the cultivation of exotic cottons of the D.A. and Cambodia types, the scene has shifted from the villages to these centres. The reasons are firstly, the large capacity of these new ginning machines; secondly, the difficulty or impossibility of ginning the new cottons in the little domestic gins; and thirdly, the trade tending to converge and concentrate in these large markets where in addition to ginning factories, cotton presses were also put up. Such a development brought in its wake many of the well-known marketing disabilities of the producer, putting him more and more at the mercy of the middlemen purchasers; it deprived the villages of a valuable cattle feed as the seeds got into the hands of seed merchants from whom it had to be bought back often at prohibitive prices on account of the competition from distant markets; lastly, it opened the door to impurity or mixtures both in seed and in the ginned cotton. However detrimental to the grower, these evils are very difficult to avoid under modern conditions of trade and industrial development and it is conceivable that they may intensify. Some of them can be and are being combated by the formation of co-operative marketing societies and regulated markets, as already explained, but much mitigation can be effected in addition, if the growers' societies themselves take up the large-scale ginning of cotton by machinery. In that case, the cotton grown by the members will be ginned in such gins, the seed will be returned to the member, so that he can retain enough for sowing and

for cattle feed and sell the surplus as he pleases, and the ginned cotton itself will be sold co-operatively.

In tracts where a superior variety—either one with a high ginning percentage, or a high quality of lint like staple length, colour, fineness, and so on—is grown, the advantage of the growers owning a gin and marketing ginned cotton instead of unginned cotton as is done at present in the primary markets will be great and much appreciated. The superior cotton is always paid a higher price by mill-owners, but the advantage of the higher price may be lost to the grower or passed on to him only nominally by the purchasers of unginned cotton as is done at present. Mill-owners themselves would like to deal with the growers, because the produce will be quite or practically pure, whereas when bought from middlemen purchasers who purchase many kinds and are not averse to adulterate high priced cotton with inferior cotton, there is always the serious risk of mixture in the varieties; so that it is very likely that mill-owners will look with favour upon such growers' societies.

In order to secure this advantage growers will have to gin their cotton either in gins owned by them, co-operatively or in a gin which they may hire for this purpose for the period necessary. Where the area is fairly large and a large number of growers are concerned with a correspondingly large quantity of cotton to dispose of, it will be an ideal arrangement for them to own a gin for themselves. As a matter of fact such growers will have to combine to form their own marketing co-operative society and this may make it necessary that they should own a gin as an adjunct to the society. In such gins all the cotton belonging to the members will be invariably ginned, and cotton from others may also be ginned for hire whenever it may be possible to do so, so that work will be provided to the gin for as long a period of time as possible. Even in the case of villages where only ordinary local cotton may be grown and the sale society sells only this cotton, it will be a great advantage if they own a gin and sell only ginned cotton. Already in many States, quite a few such sale

societies do own gins and sell only ginned cotton. By virtue of being co-operative societies moreover several other forms of assistance referred to already will be available to these growers. It may even obviate the necessity to transport unginned cotton to large central marketing societies, if small gins comprising one or two units can be installed and worked co-operatively in the larger villages at least. Rural electrification is proceeding apace and it is quite possible to instal small electric motors to drive these gins. A small roller gin establishment can handle about a ton of kappas per day. Taking about 250 to 300 lb. as the yield of kappas per acre, this will mean that some eight to ten acres can be handled in a day, so that even a single large village with an area of 200 or 250 acres of cotton can easily get through its ginning within a fortnight or a month, depending upon whether the gins are worked daily or by fits and starts according to the wishes or convenience of the members.

An excellent example of a co-operative society of this sort is the Arsikere Cotton Marketing Co-operative Society in Mysore, to which a brief reference may be made. The Society was started in order to market the new superior varieties of cotton (M.A. IV and M.A. V) evolved by the Agricultural Department, and to obtain for the growers the full advantage of higher prices realised for this cotton, on account of its higher staple. It was one of the objects to gin the cotton by the Society itself and to supply pure seed to growers and market pure lint. The society owns a ginnery of eight gins and is proposing to instal a press as well. The Society gets a cash credit of Rs. 1½ lakhs from the Apex Bank for making an advance to members and other purposes, and during the year 1949–50 sold cotton to the value of Rs. 1,63,322. The Society's cotton has always fetched a premium ranging from Rs. 1–1–0 to Rs. 2–1–0 per maund of 27 lb. Both production and sales in the year 1950–51 have shot up still higher and have amounted to 14,000 mds. and Rs. 4½ lakhs respectively (from information kindly supplied by the Director of Agriculture).

IV. Societies for the Milling of Sugarcane and Jaggery Boiling

Until the grant of protection to the sugar industry in the year 1931–32 and the phenomenal development of the manufacture of sugar in India in large up-to-date sugar factories which followed immediately thereafter, practically the whole of the immense sugarcane crop of the country was milled in ordinary bullock driven mills and jaggery and to some extent *khandsari* sugar were the products made out of it. Even now the main sugarcane product of India is only jaggery, which accounts for nearly 65 per cent. of the total crop, and all this huge production is crushed only in the ordinary bullock driven mills. Factory sugar for which the crop is crushed in large power mills accounts for only some 16 per cent. The scattered nature of sugarcane cultivation in small areas in innumerable villages, admits of only the use of these bullock mills and the making of jaggery. Even in factory areas, cane growers frequently shift over to jaggery boiling in spite of their obligation to deliver the cane only to the factory, thereby causing great inconvenience to the latter by this diversion of the stipulated cane to jaggery making. The bullock-driven mills have therefore to be reckoned with as a permanent feature of sugarcane cultivation in India. In the Mysore State alone the number of such mills amounted to 6,942 in 1940–41, and for the whole of India, although actual figures are not available, a rough estimate based on the quantity of jaggery produced, puts it down as 1,50,000 mills. It is obvious, therefore, that any improvement in one or other aspects of such small-scale milling for jaggery-making should benefit a very large number of sugarcane growers. It must be pointed out that these iron mills are themselves only less than fifty years old, and prior to their introduction, all the sugarcane in the country was crushed in ponderous wooden mills of more than one type. These mills gave a very low extraction, they could not handle hard-rinded cane, they had to mill the canes more than once to get even this moderate extraction,

and they needed moreover constant attention and repairs. The iron mills were a great improvement in all these respects over the wooden mills, the most important of which was of course the higher extraction. Every one of these advantages was highly appreciated and the old appliances and methods have rapidly given place to the iron mills almost completely.

These bullock-driven iron mills themselves can in the same way be replaced by still better mills, which are larger, give a still higher extraction, are driven by mechanical power and can easily mill the harder canes also which are high yielding varieties in contrast with the softer varieties. An ordinary bullock-driven iron mill can crush only 250–300 lb. per hour and give an extraction of between 55 and 60 per cent. on the cane, and furthermore cannot crush the hard canes satisfactorily. A small power driven three roller horizontal mill of size 18 inches by 12 inches can crush quite one ton of cane per hour and give an extraction up to 75 per cent. and can handle the harder varieties without any difficulty. The great advantage of the higher extraction and the ability to crush harder varieties is obvious; on a 20 ton crop of cane per acre this higher extraction of 15 per cent. will represent 40 mds. of jaggery more or a money value of Rs. 120 per acre at pre-inflation prices or anything upto Rs. 400 an acre at the present unconscionably high prices of jaggery. The saving in time is equally important because in these sugarcane tracts there is pressure of work at the season of jaggery boiling; threshing will have to be put through, there may be a crop of paddy to harvest, a new hot weather crop of paddy may have to be sown, and the land prepared for it, the next crop of sugarcane will have to be planted and so on. Work will therefore have to be rushed through, if full advantage should be taken of the availability of irrigation water in the tanks. The cane milling in the usual way with bullock mills is both slow and laborious and the increased speed with which the power mill can accomplish the work will mean a great saving in time which can therefore be utilised for the other very

important operations. In fact, the replacement of the wooden mills by the iron mills and the replacement of the inferior types of iron mills by better types and the replacement of the bullock mills themselves by power driven mills comprise the greatest improvement called for in sugarcane cultivation, for the saving in that way will run into crores of rupees.

It is also noteworthy that cane milling has been a piece of co-operative or collective work, from the earliest times. The type of cane crushing appliances used in the olden days required the joint labour of not only all the growers but the other villagers as well. The bullock-driven iron mills no doubt dispensed with the need for such a large crowd, but still they are by no means one-man concerns. The many items of labour, such as cutting and carting cane, working at the mill, driving the bullocks, feeding the canes, collecting and storing the juice, working at the boiling shed both at the pan indoors and the furnace outside, and the fact that work goes on day and night, all these taken together require the services of a large number of men, which can be secured only by all the growers working together. As this foundation of joint working thus exists already, it will be only necessary to adapt it and organise it into the form of a regular co-operative society and thereby secure to the members the many advantages of such power milling. Such a mill with an engine or other motor, and the furnaces and other equipment necessary to cope with the rapid milling can be thought of only for joint ownership, both on account of the larger area it can serve and the comparatively high cost of the installation. They will be therefore unsuitable (except in special cases of large enterprising growers) for individual ownership but eminently suitable for joint ownership and working by a co-operative society.

A small installation of a power mill may be said to comprise an 18 inches by 12 inches three roller mill together with a 3½ H.P. oil-engine or electric motor to drive it, with accessories like juice pump, overhead juice tank, necessary pipe

connections, etc., in the milling shed. In the boiling house a set of six sets of boiling pans, over single pan or double pan furnaces, together with as many jaggery moulds, cooling pans or troughs, minor hand tools for skimming, etc., will be about the necessary equipment for coping with the capacity of the mill. About 20 acres of sugarcane can be easily handled by the equipment, within a period of a month and such an area will represent probably some forty or fifty growers, if not more, as the total area in average villages will seldom exceed 20 acres and as individual growers seldom grow more than half an acre each. Cane-growers are at present used to and have their customary methods of organising the milling, which decide both the order in which the cane area of each grower is to be handled, including priorities in exceptional cases, the apportionment of work, wages and cost of milling and jaggery making, and these can be followed, with such modifications as may be necessary in organising the milling by power machinery as a co-operative society. In fact, just as in the case of co-operative societies for lift irrigation, cotton ginning or tractor ploughing, differences may arise among members over the order in which each one should be served and this will have to be equitably and definitely arranged far in advance by the mutual consent of the members, allowance being made where a member may not be ready, or his cane not ripe enough, and similar exceptional cases. Each member may be charged the cost of making his jaggery, calculated at a rate roughly the same as what may be charged by any contractor or what may be determined as reasonable by the society; it will in fact be necessary to fix this rate in advance. In such a case all the expenses at the milling shed, will be borne by the society, the members only delivering their cane at the mill. It may be possible for some members to work as labourers at the mill and to earn wages therefor. The total receipts or gross returns will be the amount realised on the entire produce of jaggery made and charged for at the agreed rate. After deducting all expenses, and including depreciation on

equipment and interest on capital and loans, the profits will be divided among the members according to the rules usual with all co-operative societies. This may include also a rebate on the jaggery made by each member if the same is found possible. The members who worked as labourers will be additional gainers, to the extent of the amount earned as wages. The milling will be found to have not only resulted in a larger yield of jaggery but also to have been carried out at no higher cost than what it would have cost members if they went about it individually in the old way and with ordinary bullock mills. The speed of the operations which make it possible for the members to attend to the various other operations referred to, the great relief from the physical strain to both men and animals and a higher outturn of jaggery on account of the higher extraction are all advantages which will be readily appreciated. If in addition it is found that the total cost to each member is not excessive (leaving aside any profit) then the method has everything to recommend it.

The following extract of the relevant provisions in the bye-laws of one of such societies, will be found helpful:—

" The objects of the society will comprise among others (*a*) the furtherance of the cultivation of sugarcane by the co-operating members; (*b*) the manufacture of jaggery by the members co-operatively; (*c*) the issue of loans to members for approved purposes; (*d*) such other objects calculated to promote the economic benefit of the members as may be resolved by the society and approved by the Registrar.

Membership.—All persons above the age of 18 years of respectable character and sound mind, residing in any of the villages specified or possessing, as landlord or tenant, lands cultivable with sugarcane in any of the said villages shall be eligible.

Every member shall bind himself in his application to cultivate some plot or plots of sugarcane in his holding, or possession or enjoyment, as tenant or landlord every season and to get it milled and boiled into jaggery by the society as

per terms and conditions to be determined at its committee meeting with the approval of the Registrar.

Members who fail to cultivate sugarcane or to bring it in good condition to the manufactory for milling, will be liable to such penalties as may be determined by the subsidiary bye-laws to be passed by the society with the approval of the Registrar.

The committee shall remove from membership any person who permanently removes his residence from the villages mentioned in the bye-laws and does not possess either as tenant or landlord any land cultivable with sugarcane in any of the said villages.

The society shall keep two sets of accounts (*a*) for the manufacture of jaggery and (*b*) for its credit business.

The jaggery account shall charge a uniform rate per maund of jaggery manufactured both for members and non-members, allowing a rebate, if possible, for members only.

Duties of the Committee.—Among the duties of the committee are:—

1. To enter into contracts on behalf of the society every season binding the members to cultivate the allotted plots with sugarcane and fixing penalties for non-performance.

2. To purchase plant and machinery necessary for the manufacture of jaggery and to erect suitable buildings and godowns as sanctioned by the general body.

3. To manage and supervise the manufacture.

4. To fix dates when the canes of the members should be brought to the factory for milling, giving the members suitable notice thereof.

5. To sell the jaggery manufacturesd, in the case of members failing to pay their dues and set off the proceeds towards these dues.

Apportionment of profits.—The gross profits of the society including the credit and jaggery boiling branches shall be distributed in the following order:—

1. Cost of working the business, including wages, fuel, etc.

2. 20 per cent. depreciation on engine and machinery and 10 per cent. on building.

3. Interest on deposits, and loans borrowed, if any.

4. A sum not less than 25 per cent. to go to the Reserve Fund.

5. Interest up to $6\frac{1}{4}$ per cent. on the paid-up share capital.

6. 10 per cent. of the balance as a charity fund to be decided by the general body.

7. 80 per cent. of the remainder as rebates to the cane growing members to be divided in proportion to the cane supplied by each.

8. 20 per cent. as extra remuneration to the wage-earners working in the society in proportion to their pay.

A variation in the working which may somewhat simplify the scheme will be for the society to own the installation and merely conduct the milling, and allow members to carry out the boiling of the jaggery and all other operations incidental to it by themselves, in which case the society will charge only a rate per boiling as a kind of hire. The hire so earned after deducting expenses will become the total income of the society for disposal according to their rules. In both cases a further advantage will be the facility for a joint sale of the jaggery in the society itself, without the need for carting it to market and submitting to the exactions and troubles usual in such markets. The large quantity available at one place will attract buyers and the competition may probably result in better prices also. The other facilities such as those for raising funds, for the supply of manures and for the grant of small loans to members and so on usual with co-operative societies will also be much appreciated features.

Co-operative societies for milling with bullock mills of better type.—While there is thus scope for the use of power mills co-operatively by special societies formed for the pur-

pose, the ordinary co-operative credit societies themselves can take to the use of the ordinary bullock-driven mills co-operatively as part of their activities, profitably and without much difficulty. The mills referred to here are of a better type, giving a higher extraction and of a stronger build, which goes by the name of the 'Nahan' type. With these bullock mills the present practice is for one or more growers to hire them from merchants who make a business of it, a boiling outfit comprising a bullock mill and a couple of pans, moulds, cooling troughs, etc., and pay hire for them at so much per day. It should be quite possible for societies to own one or more outfits for the use of members. Hire may be charged at the same rate as that of the merchant (if not a little lower) for the number of days a member may use it; the amount so collected after the payment of a small rebate to the members who actually used it becomes the profit of the society to which all members are entitled. One or more such outfits can be purchased out of the reserve funds of even small rural societies and it will be found to be a very profitable utilisation of the funds so invested. It may serve a very useful purpose if co-operative societies can be formed for this purpose alone, *viz.*, for owning and hiring out to its members, a number of such outfits, so that it may meet the needs of a large number of growers. Of course this is merely somewhat similar to an agricultural store society where milling outfits are kept for hire instead of for sale, and where the advantage of the use of power machinery is not the aim, nor a joint owning and joint operation of cane milling and jaggery boiling. Still it enables growers to use an efficient bullock mill giving a higher extraction and secure therefore a higher return on their cane crop. It will be found that in the course of two or three years, the cost of the whole outfit would have been paid out of earnings and that the outfits may be regarded as free gifts to the society. The idea has been found very attractive and societies usually need little persuasion to adopt it.

V. Co-operation in Fencing Fields and Gardens

Another operation which lends itself to profitable co-operative action through a co-operative society for the purpose, is the fencing of fields and gardens and their upkeep, repairs and maintenance in an efficient condition. This applies more particularly to areca gardens and sugarcane fields, and even to fields of rice or other crops, in the tracts situated in the midst of or adjoining forest country, such as is universally the case in the malnads. The inroads of stray cattle, of wild pigs, deer, porcupine and such animals spell ruin to these areas. Sugarcane is heavily damaged not only by being eaten and trampled down but also by the gnawing up of the lower portions of canes, which has the effect of laying low whole clumps of cane; the rice crops suffer not only when they are in ear but also in the earlier stages being snouted under by pigs; plantains, cardamoms, young areca trees and fruit trees in the gardens are likewise grazed, rooted out, the bark gnawed off and the produce too eaten up when this can be reached. Even more loss is caused by the trampling down of the crops and by the ruin of the drains, irrigation channels and ridges than by the actual grazing down or other damage of the crops.

In the arecanut belt as the gardens are all situated in one block in the valleys in which many owners have their share, the fencing is required principally for the entire outer margin or boundary of the whole block and this has to be very strong and without any gaps or weak spots. Such fencing is generally put up by all the owners jointly and the fencing material itself is provided by jungle wood sticks derived from the forest slopes which adjoin the gardens and form the sides of the valley. Such fencing is seldom strong enough and if any one has been negligent, a gap near his strip of garden practically opens the gate to the gardens as a whole. Strong wire fencing, either of barbed wire or the so-called pig-proof woven wire fencing, which can be put up in one continuous line and enclosing the whole block has been found the best material and is to be strongly recommended. The

fencing is both strong and fairly permanent and leaves no room for individual neglect. The cost is however a great obstacle to the use of this material but can be and in fact has been got over through the agency of co-operative societies formed for the purpose. Funds are easy to secure for such a society and the material is thus brought within the reach of every one concerned however poor he may be. Members pay in small annual instalments towards the repayment of the loan as well as for covering the cost of any small repairs that may be necessary. The saving effected by this very efficient protection of the crop is considered more than ample for paying the instalments. The permanent nature of the fence also avoids the need for frequent repairs and their cost, not to speak of a sense of freedom from worry and anxiety for the safety of the crop. The Forest Department can and does help such a society by supplying suitable poles for use as standards, while fencing wire, staples, coaltar for smearing over the posts to make them white-ant proof, and other materials, are bought wholesale co-operatively, so that the cost to the individual owner becomes much less than if he attempted the work by himself. The result is a substantial and permanent protection of the crop and a great saving in cost. It will not however dispense with the need for vigilance on the part of the society, so that weak spots are detected and repaired in time. White-ants may damage the posts despite the coaltar, irate frustrated animals may butt against the fence and make it sag, while wanton mischief by unfriendly neighbours may also have to be reckoned with.

In the case of these crops, fencing is a permanent measure, but even fields of annual crops like sugarcane have to be sufficiently well protected and very strong fencing is required in some tracts. The kinds put up by growers at present are of varying quality and though some are very strong and efficient almost like a wall, still they perish after a season, entail great labour in getting the materials and in plaiting or weaving into wall-like sections. As fencing is required every year, though it is put up in a different block each year,

it will be a convenient step if several rolls of woven wire fencing are bought and owned by growers, which may be put up where wanted more or less like a portable arrangement and not a permanent fixture. They can be removed and rolled up after the cane crop is harvested and either stored or used immediately where required according to circumstances. Such a step will be possible only through a co-operative society; or if the whole block belongs to a single individual owner, who parcels out the land among many cultivators, then it will have to be purchased and owned by him and made available to the growers for a consideration. In any case such fencing will be the best way by which valuable crops whether annual or permanent, can be saved from damage if not absolute ruin, and co-operative ownership will be the best means of making the benefit accrue to every one concerned.

In the malnad districts of Southern Bombay where the need is very great for strong fencing on account of the havoc of wild beasts, several co-operative societies have been formed for the purpose of putting strong fencing co-operatively. Such societies numbered 13 in the year 1931 and between them they had put up pucca wire fencing, measuring 25 miles in length altogether. Eight of these societies have even employed a qualified supervisor to look after the work, and formed themselves into a Union for this purpose (S. S. Talmaki, in *Co-operation in India*).

It may be mentioned in this connection that even the destruction of the wild animals causing the damage, by means of shooting, trapping or catching by nets, etc., and saving crops thereby have been attempted by organised co-operation and more than one society of this kind is reported from Southern Bombay.

VI. Co-operative Societies for the Threshing of Grains

Reference has already been made to the fact that the present methods of threshing are both slow and laborious and to the need for speeding them up in the interests of better crop

production. As explained already the threshing season coincides in most villages with a number of other operations, such as sugarcane milling and planting, preparation of land for and sowing of summer paddy, cotton picking, and in tracts of well cultivation, the needs of a variety of crops, and in most cases of the marketing of produce like groundnuts and others which may be ready. Threshing requires thorough drying of the sheaves for the complete separation of the grain from the earheads and such drying takes up the whole of the hottest part of the day leaving only the latter part of the day for the actual threshing, and this fact greatly limits the time which can be devoted to the work. Winnowing generally follows immediately, if possible, and may indeed be considered as part of the threshing work. This however can be taken up only when there is a brisk wind blowing, so that both operations wait more or less upon the weather, the threshing on the sunshine and the winnowing on the wind. Neither being dependable, the time available is to that extent much more limited. Speedier methods will therefore not only set free both men and bullocks for carrying out the other seasonal operations in their proper time but also to finish the threshing within the period when weather conditions may be favourable. It may be observed that all these conditions apply particularly to the tracts of ragi cultivation as in Mysore and the improvements indicated will apply to the ragi crop in the main.

The present methods of threshing are well known and are three in number, *viz.*, (1) beating out the grain, (2) trampling out the grain under the feet of oxen, (3) the somewhat new method of working a stone roller over the sheaves, which, in effect, is a replacement of the team of oxen by one or more heavy stone rollers. The last method will thresh quite 1,200 lb. to 1,500 lb. of ragi per day using only one pair of bullocks and two men, whereas for the same outturn by the second method a team of ten oxen and ten men will be required.

Though for this reason the threshing roller has become very popular in many villages and has practically displaced

the other two methods, it still depends to a considerable extent upon the weather for its efficiency in threshing and entirely upon it for winnowing.

Threshing by power driven threshers is all but universal in most foreign countries, which have a large capacity, and result in a great saving of time and labour. The machines not only thresh grain but also winnow it at the same time and deliver clean grain, dispensing with the need for waiting upon the weather. They are owned either by individual farmers or by professional men who do custom threshing for hire, owning a large outfit and moving from place to place during the season and serving farmers in a regular circuit. A similar service can of course be rendered by many a co-operative society of the farmers themselves owning and working such an outfit and this indeed will be the only possible way by which small farmers can secure the advantage.

The point to be stressed in this connection is that the first requisite in a scheme of this kind is a threshing machine capable of threshing the different grains satisfactorily, that is to say, which will separate the grains from the earheads completely without leaving any unthreshed earheads and which will not break the grains to any extent in the process. Among the major grain crops of India, nearly every one can be so threshed and efficient machines already exist for wheat, rice, barley, and jowar (milo maize) which can be used under Indian conditions also. For the other grains like bajra and ragi, suitable adjustments will have to be made, and this is quite possible. As a matter of fact very good work in threshing ragi has been done not only in trials but in actual large-scale threshing as well. The machines are well provided with adjustments and other equipment for the threshing of different grains without breakage and for the rest the care and skill of the operator will make for a successful job.

The suitable machine being decided upon, the next requirement will be the source of power, which may be an electric

motor, an oil engine, or where a tractor is owned, the tractor itself as most tractors are nowadays equipped with a belt drive also. The latter two will be found most suitable where the machine may have to be moved from place to place; the tractor of course will do other work besides, such as ploughing, cultivating, etc., and will operate the threshing machine at the threshing season. For a portable outfit using an oil engine the latter must of course be of the portable type. The electric motor will be found most convenient for stationary work, provided of course the power is available. If the stacks of all or most of the co-operating farmers can be put up in central situations, the need for shifting the outfit from place to place frequently will not arise; as a matter of fact this will be the most convenient course to adopt and as far as possible, a central installation should be aimed at.

Even small machines can thresh about four pallas or about 1,000 lb. of ragi per hour, which is tantamount to an acre an hour in the case of a good crop and perhaps two acres when the crop is about average. The outfit can be worked largely independent of the weather and over a longer period of time, as no question of strain is involved as in the case of human and bullock labour. Moreover as both threshing and winnowing proceed simultaneously and the machine delivers clean grain, there is no need for a separate winnowing operation, which means a saving of both time and labour cost. If we take 2½ pallas of ragi as the average yield per acre of ragi, this will mean that about ten acres can be handled in a day or that the village say of 300 acres can get through all its work in the course of a month. As in the case of the other kinds of power outfits described so far, an important condition will be firstly a proper organisation and understanding about the order in which each member should be served, and secondly efficiency of operation, avoidance of breakdown and a good repair service.

CHAPTER VI

CO-OPERATIVE DAIRY SOCIETIES

Co-operative societies for the sale of milk, butter and other dairy products form a most important line of co-operative activity and the co-operative movement may indeed be said to be associated in the popular mind with the dairying industry. Such societies have become the most efficient and advantageous method of marketing these products both for the large producers in countries like Australia, New Zealand or the U.S.A. and for the innumerable small farmers all over Europe. It is through co-operation in dairying that farming has been made a paying industry and dairy societies in countries like Ireland and Denmark are a classical example of the manner in which the farming industry has been rescued from decay and a better standard of living if not comparative opulence secured to farmers, who would otherwise have been reduced to perpetual poverty and suffering. This development is largely the result of the organisation of the joint sale of milk through societies, that is to say, by the diverting to the actual producers of the profits made by wholesale large individual purchasers or companies, who bought milk from the farmers either for sale as such in retail or for the making of butter in the creameries owned by them. It is really a case of the producers themselves combining for the marketing of their produce, in the same orthodox manner of co-operative sale societies.

The Position in India.—In India, however, attempts towards the formation of such milk-selling societies are of recent origin, and it is a noteworthy fact that this most favourite and universal form of co-operative effort should have been taken up almost the last among the various different kinds of societies in the country. It is not however altogether without reason and in dealing with the scope and organisation of such societies in India it will be useful to discuss them briefly.

Crop production is the most important aim in Indian farming and the production of milk occupies a minor place, and even then it is more or less as an incidental circumstance in the production and keeping of cattle for draft and manure purposes. The milk produced in the villages is therefore meagre and is just sufficient to meet the needs of the farmer and those in the immediate neighbourhood. The animals are poor milkers, the breeds being only draft breeds, with milk yields almost negligible in quantity, as compared with the yields in Western countries. There arises, therefore, no question of surplus milk demanding a profitable market. Such milk as is being produced in the country by the dairy animal of the country, *viz.*, the buffalo, is being made use of for the preparation of the dairy products, curds and ghee, which are less perishable than fluid milk and can therefore keep; these are the main marketable kinds of dairy produce, and not fluid milk. Indeed, in the spacious days of old, it was even considered improper if not sinful to sell milk or food and those who resorted to it as a trade were looked down upon. Towns and cities were few and the standards of living too not high enough to demand any large consumption of milk. Such demand as continued to arise gradually with the growth or concentration of the population and the increase in the level of income was capable of being met by small individual cow-keepers within town limits and there was little stimulus therefore sufficiently powerful to induce the farmer to devote more attention to milk. It must be remembered too that it is the large demand from prosperous industrial cities or countries with their great earning and spending capacity that accounts in a large measure for the huge milk production and trade of the exporting dairying countries or tracts in the West. It is significant that in India, likewise, the supply is slowly reacting to a similar growing stimulus from the cities and milk production is rising slowly in importance, similar causes thus leading to similar results.

The general poverty of the country is however so great that the consumption of milk and milk products still remains

very low, being in terms of fluid milk only about 5·5 oz. per head of the population. There is not such a great trade in them at any rate as fluid milk, nor any large-scale middlemen traders, which may create the incentive necessary for milk producers to combine into co-operative societies. There is also the preference for individual effort and action, which accounts for the fact that men and women will walk miles to a town to sell just a seer of milk or a pot of curds each, rather than combine and employ or depute one of themselves to transport and market the pooled quantity.

The growth of cities and the increasing demand for milk as the result of rising standards of living coupled with the petty scale of production, put a premium on adulteration and even such quantities as were consumed were very poor in quality. The menace to public health which such impure milk always implies, was slowly being recognised and the subject of improving the milk supply to towns and cities became a matter of serious public concern.

It was to meet the needs of consumers in urban centres therefore that the co-operative movement was harnessed and co-operative milk supply societies began to be organised. It is well to stress this aspect of these societies because dairy societies abroad were as much for the supply of butter as for the supply of fluid milk or even a good deal more for the former product than the latter, unlike societies in this country which confine themselves, with very few exceptions, to the supply of milk alone. Another equally important aspect of these societies is that they are formed in the interests of consumers, so that they can obtain sufficient supplies at a reasonable price and of guaranteed purity. No doubt as we shall see presently, producers too derive considerable advantages, but this is only more or less as helpful to or necessary for the success of the societies in becoming efficient suppliers to consumers.

Attention may, in this connection, be drawn to a relevant and rather peculiar feature, *viz*., that the members of these societies are required to bring their cows to a central

yard and milk them in the presence of an Inspector or other official of the Society, so that the purity of milk may be guaranteed, which testifies to the overshadowing importance (though perfectly reasonable) of the interests of consumers. Parenthetically it may be noted that one writer at least characterises this feature as a sad commentary on the reputed honesty and trustworthiness of the Indian peasant, but we doubt if human nature is different elsewhere, because various other deterrent measures prevail there for enforcing honesty in this particular field.

Like most forms of co-operative activity in India, milk societies have been started principally under Government auspices and are largely run under the active guidance and support of the officers, and though this is common characteristic of the movement from the very outset, the milk societies perhaps constitute a rather striking illustration. This is more or less inevitable, and will remain, as a matter of fact, indispensable for many years to come; the municipalities, public health authorities, dairy technical officers, veterinary and cattle improvement officers will have to continue to render appropriate help to the Co-operative Department in the organisation and working of these societies.

Scope for co-operative milk supply societies. — As regards the scope for co-operative milk supply societies, the first requisite, *viz.*, the demand for milk, great even now, is of a steadily growing magnitude, for reasons already indicated. Increasing industrialisation, larger earnings and rising standards of living, the growth and the concentration of the urban population and as an index thereof the enormous increase in the coffee drinking habit, not to speak of an increased appreciation of the need and value of milk in our dietary, are all well known reasons. The available supplies are meagre, poor in quality and very costly at that. Private enterprise has not been slow and supplies are bought by numerous itinerant agents both morning and evening for sale in cities and vested interests are growing up, though not powerful yet. It behoves

producers to combine into milk supply societies before the menace of competition with private traders assumes any importance similar to what exists in other trades.

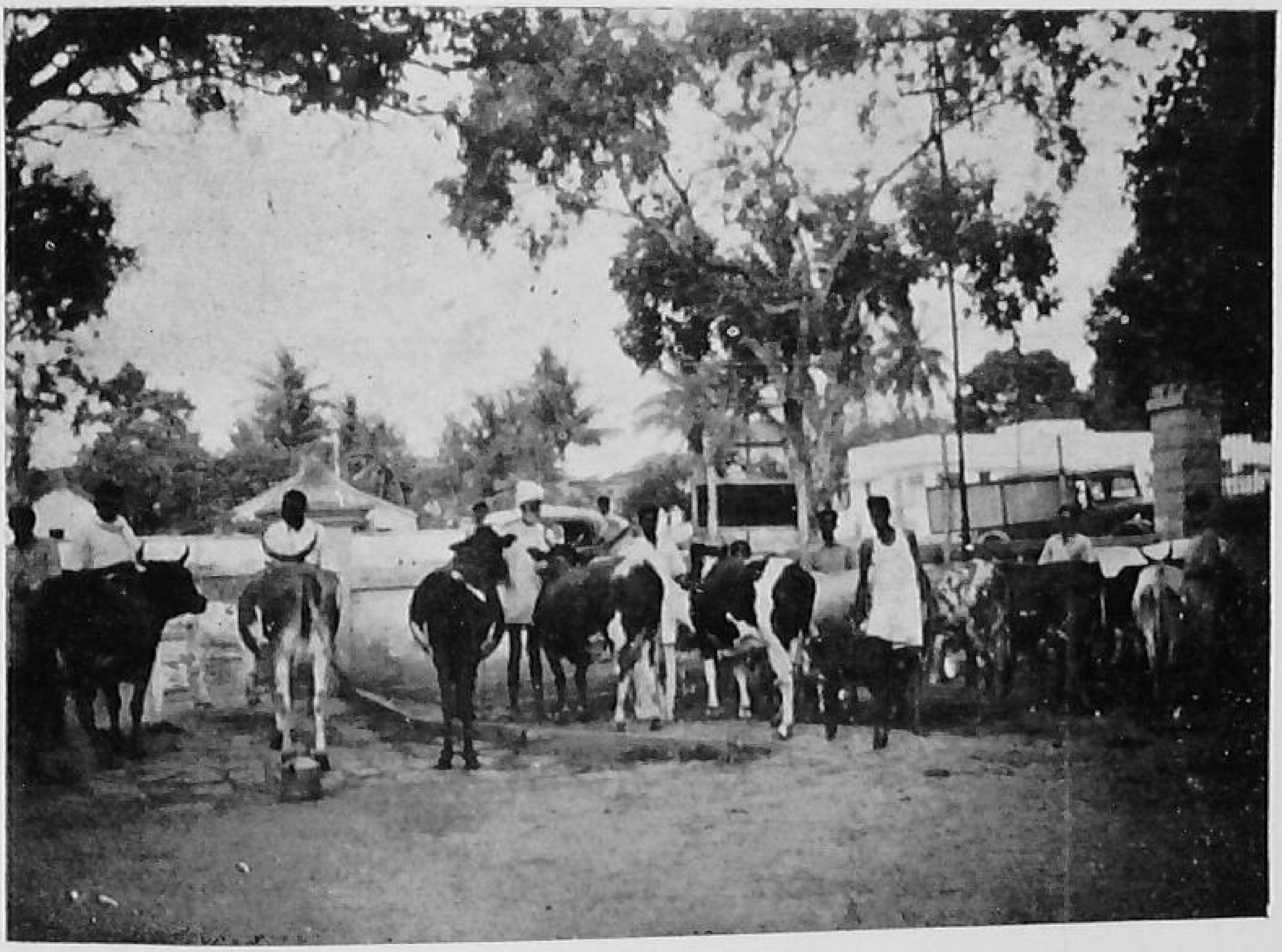
On the other hand, it should be noted that the production per individual is very small probably a few pounds, and any appreciable quantity has to be collected from many producers scattered over several villages. Any one watching the delivery of milk at some of the societies by individual members will be astonished at the meagre quantity brought in, each in a small vessel holding a quart or less. Milk has to be collected both morning and evening and it is imperative that it should arrive at the delivery end in the cities with the least possible delay, lest deterioration should set in, unless specially constructed transport vehicles with cooling arrangements are employed. There is moreover the almost universal practice of adding water, even the best men not hesitating to add a little. The laws in force to prevent such adulteration are very defective in many respects; for one thing, the standard prescribed is much too low considering the comparatively high fat content of Indian cows' milk and the outstandingly high fat content of buffalo milk, detection and establishment of guilt are both difficult, prosecutions rarely stand and when they do the punishment is by no means deterrent. All these put a premium on such adulteration. Societies will have to guard against milk of poor quality with the greatest care and this in fact should be their strongest weapon in fighting against competing individual traders or companies; it will prove both powerful and reliable. As already stated the success of sale societies whatever may the product they may deal in, will depend upon the distinctive character of their product, such as a special quality or grade, purity or feature which will mark it off from the bulk of the ordinary competing tradesman, and milk is no exception to this rule.

Another feature favourable to these societies is that they may serve both producers and consumers, which is rather unusual. Both classes of people can join these societies

and become shareholders. Such a combination of interests adds greatly to the stability of the societies. This is very much in contrast with producers' societies in general, formed for the sale of products and of consumers' societies formed for the purchase, because the former are after high prices while the latter are after low prices. If the other important requirement, *viz.*, loyalty on the part of members of both classes be abundantly forthcoming, that is to say, if the producer members would loyally supply all their milk and at all seasons to the society and if consumer members would also likewise loyally buy their daily requirement only from the society, then the success and stability of the society are assured. Necessary as such loyalty is in the case of societies of all kinds, it is even more so in the case of milk societies because the article is a highly perishable one and unexpected surpluses and their disposal become very difficult.

As regards the organisation of milk supply societies, it may be stated in general that ultimately they will have to conform to the type and methods of the large societies of Western countries, and this will come about almost to a certainty as the country becomes industrialised, city populations grow, wealth increases and westernisation is advancing rapidly. At present, however, humbler models will largely suit the conditions in most parts of India and will have to be adopted.

Primary societies.—Co-operative milk supply societies may be either (1) of what may be termed the primary society type or (2) of the type called Unions, which comprise many primary societies as members. The primary society of a simple kind undertakes the task of collecting the milk from its members, taking the necessary precautions to see that it is pure and fresh and bringing the quantity so collected to the town and distributing it to its regular customers, who may be members, if the society consists of both producer and consumer members or merely its patrons but not members. Sometimes cow's milk and buffalo's milk may be collected, brought



Milking yard of the Mysore Co-operative Milk Supply Union Ltd., Bangalore, where cows are milked under the supervision of the Union Staff

— *Photo by Author.*

The Insulated Milk Transport Motor Van designed by the Indian Dairy Research Institute, Bangalore, referred to in the text

The van, showing the interior ; both van and milk containers are insulated, and the latter can be kept either cold or heated up as may be necessary according to the distance to be travelled, *i.e.*, the time likely to be taken

— Photos by courtesy of the Director of the Institute.

in and vended separately according to customers' preference, but generally only cow's milk is handled although there are important exceptions such as the city of Bombay, where it is buffalo's milk which is largely vended. The distribution takes place very soon after the collection, both morning and evening, and it may be finished as a matter of fact within a couple of hours or less after the arrival of the milk. It may also happen that the milking itself takes place in the premises of the society, which avoids the need for any transport at all, and also ensures distribution without any delay. This is the case where a society is composed of milkmen residing in the same town, or villages on the outskirts. Such a society is in fact a simple substitute in the form of a society for a number of individual milkmen, with the difference that a larger quantity of milk is handled, that the members can obtain loans, concessions and other assistance available to co-operative societies, and the customers can expect milk of guaranteed quality. Societies also take a small allowance of extra milk from each supplier in order to cover losses in handling and retail sale. They protect themselves further against failure by members to deliver and sell milk through the society by imposing fines for each failure and even by expulsion of the member in the case of continued failure.

The commonest and very important advantage accruing to such societies is the securing of loans at easy rates of interest from co-operative banks, for the purchase of cows or buffaloes, cattle feeds and fodder, etc., which is expected to be repaid in easy instalments out of the sale proceeds of the milk. Another advantage which the society secures is some sort of preference or favoured treatment in the contracts for supplying milk to hospitals, hostels, school children, child welfare centres and so forth.

As the quantity of milk handled increases on account of an increase in membership or of the quantity produced per member, additional arrangements will have to be made, proper standard milk churns will have to be bought for hold-

ing the milk, suitable transport carts or other vehicles will have to be provided and more delivery men employed. A regular delivery depot in the town will also become necessary, where milk may have to be received and stored prior to delivery in special insulated cans, after some form of cooling, filtration and so on. With the growth of the business, a regular pasteurising plant with all accessories will also become necessary.

Milk Supply Unions.—The co-operative milk supply unions comprise as members a number of primary societies. In this case these primary member societies confine themselves only to the production of milk and do not undertake distribution. They hold themselves responsible for the production of pure, clean milk, milking yards being sometimes provided where cows are brought and milked with due attention to details ensuring cleanliness and purity, collection and delivery to the agent of the Union either in the village itself or at some appointed place at the main road, where the collecting van of the Union will take delivery of it. All payment for milk is made by the Union, from whom advances for the purchase of animals or cattle feeds may also be received. The Union itself may function as a co-operative store for cattle feeds and be able to supply them at cheaper rates; it may arrange for the stationing of one or more good breeding bulls in central villages; it may also arrange for prompt veterinary assistance or a staff of itinerant veterinary officials for regular weekly visits. The Union may also provide facilities for the boarding of dry cattle in a suitable area maintained as a dry cattle or salvage farm.

For the collection, storage and distribution of milk, the Union may have elaborate arrangements and adequate equipment. Usually insulated churns are used in the collecting vans, the milk having been previously strained into them and filled at the milking yard or office of the primary society; the vans may be either motor vans when the supply is large and comes from distant centres or at least horse drawn light buggies. A special motor van in which the milk is

cooled and kept cool by cooling machinery has been designed by the Indian Dairy Research Institute which will be found very serviceable for the quick transport of milk without any chance of deterioration. It has been found that provided milking has been clean, as a maximum not more than eight hours can elapse between the time of drawing the milk and the time it arrives at the central depot and its pasteurising plant; the transport should therefore be such that the time will not exceed this limit. If however the milk can be cooled to 50° F. immediately after it is drawn, then it can stand for even at 20 hours, provided the temperature during this period does not exceed to 80° F. Large Unions will have to arrange for such cooling at their collecting centre. The Union owns a regular city milk supply dairy, with proper accommodation, a plentiful supply of water laid on, and a complement of the equipment usual in such dairies such as for weighing, filtering, cooling, pasteurising and cold storage, bottling, etc. Frequently the dairy owns also a separator and butter churn, so that some butter may also be made regularly for customers, or occasionally when there happens to be a surplus of milk. Such a dairy has naturally a large clientele of consumers and therefore must have an efficient system of distribution, so as to cover all the rounds within the specified time both morning and evening. Obviously such Unions can be started with advantage only in large towns or cities.

It is of the utmost importance in these societies, whether they are small or large, Primaries or Unions, that the milk produced and delivered by the actual producers is absolutely fresh and pure, and honesty in this respect is highly essential. If milk which is not fresh and has developed even a trace of acidity, or milk collected in dirty vessels, or milk mixed with colostrum, is delivered by even one man either unknowingly or wilfully, then it may ruin the whole of the milk collected, as such impure and tainted milk will be sufficient to taint a very large quantity of good milk. One man's dishonesty will therefore injure all his brother-members, and it is therefore to the

interest of everyone that strict honesty should prevail. Of course, such fraud can be detected by suitable tests for freshness or impurity at the time of the delivery itself before it is mixed with the bulk lot, but when milk is delivered in very small quantities by individual milkmen as is usual with our producers, it will be hardly possible to conduct a test for each and every one of the lots as they are received and to pin the blame on the person concerned. The fraud is detected only after the damage has been done and then there is no means of repairing it or of finding the culprit. Sometimes members may resort to the fraud in the belief that the pasteurising process will rectify it, but pasteurisation cannot convert bad milk into good.

Private milk supply dairies owned by capitalists or large professional dairymen have already been opened in large cities, whose agents scour all the villages within easy reach, from which all the available milk is purchased and brought to the towns as quickly as possible in headloads, bicycles, pack horses, or even by railway or bus. Farmers in these villages are nearly all indebted to the buying agents, having received advances and are not free to sell to any others—a condition similar to those described in the case of other sale societies. In order to avoid the competition from such agents, it has been suggested that Unions should tap villages farther afield, beyond a radius of say 25 miles and that they should provide transport by motor lorries or cars. Reference has already been made to the special transport lorry designed by the I.D.R.I. in which there is arrangement for cooling the milk and to keep the temperature within the safe limit. Such cooling makes it possible of course to stretch the transport interval and therefore to tap villages which cannot be touched by using only ordinary transport. These feeder villages will each be formed into a primary society, as a member of the Union, and it is expected that the outlet provided for their milk combined with the other facilities that go with such a scheme to which reference has already been made, will help to increase milk production,

leading even to changes in the rural economy, like the system of growing fodder crops, and of mixed farming.

The example of remarkable progress in Madras State.—In recent years a large number of both societies and Unions have come into existence, notably in the State of Madras.

The progress made in this State is so noteworthy that a brief reference to the salient features may be found both useful and interesting. The Madras Co-operative Milk Supply Union which was started in the year 1927 has made such steady and remarkable progress that it has now 88 Primary or Feeder Societies as members from which it draws its milk supply. Other towns and cities have followed its example, so that several of the municipalities and major panchayats have Milk Supply Unions, which in the year ending 1948 numbered 23, while milk supply societies numbered 354. The Unions comprise primary societies of milk suppliers, ranging from two to ten, though this number is steadily increasing. All of them are predominantly producer organisations. Members have to bring their cows and buffaloes to one or more of the milking yards provided by the Union or the Society itself and to milk them under hygienic conditions and under the supervision of officials appointed for the purpose. Cow's milk and buffalo's milk are handled and vended separately. It is also seen to that the milk vessels are cleaned thoroughly and sterilised after use and that the milking yards are also disinfected. Bulked milk is transported quickly to the Union, usually either by pony carts or bicycles; some of the Unions own motor vans, and one, *viz.*, the Coimbatore Union, owned five lorries. In the Union itself the milk is strained and cooled to 50° F. and stored for distribution. Some Unions dispense with the need for storing the milk, as they are able to receive and distribute the milk within three hours of the milking, milk being delivered at the customer's door by cycle boys, or from special milk carts from bulk or bottles or sealed cans. The Madras Union sells milk from sale depots as well in addition to house delivery. The Union owns 60 sale depots and

employs 24 house delivery boys. The quantity of milk handled in 1947–48 was 30·85 million pounds. At least one Union, *viz.*, the Madras City Union (Ayanavaram), owns a pasteurising plant. In addition to the general public, Government institutions like hospitals, students, hostels, jails, child welfare centres, and the larger hotels form the clientele and there is generally no difficulty in selling all the milk as fluid milk. Nevertheless provision is made for dealing with surplus milk also. Thus, most of the Unions have cream separators, butter churns, butter workers, etc., and prepare cream, butter and also ghee for sale as a means of disposing of any surplus milk. With the same object, some prepare and sell curds, both from whole milk and from separated milk. One Union has gone in even for cheese making, owning a cheese vat, cheese press and so on, and prepares also casein. Practically all the Unions resort to preparing and selling *palkova* (desiccated sweetened milk) which is said to be in great demand.

The assistance of Government is both general and liberal; interest-free loans are granted for the purchase of cows and buffaloes, which amounted to over Rs. 4½ lakhs in the year 1948. Subsidies are also given for nearly every activity of the societies. The most general advantage enjoyed by members is of course the securing of loans for buying animals and cattle feeds. Some Unions provide a salvage or dry cattle farm, some cultivate fodder grasses with the town sewage; some maintain breeding bulls, some award prizes for the best societies and for the best kept animals; some have even taken up milk recording schemes for their members. (Extracted from the series entitled "Milk Supply Unions in Madras," published in the *Monthly Bulletin of the Bangalore Dairy Cattle Society*, and also from the article by B. C. Basavalingaiah, in *Indian Dairyman*, Vol. II, No. 8.)

This record of achievement bears testimony to the benefits which producers can derive by co-operative effort, and incidentally demonstrates how the very difficult problem of providing cheap and wholesome milk to the towns and cities of

India can be solved by co-operation without resort to very elaborate and costly schemes under capitalistic control or even that of Government or municipalities.

Butter making societies or creameries.—Although the sale of milk as such will be the most profitable method of its disposal and although the supply is still far behind the demand which is insistent and almost unlimited, still its utilisation for the making of butter also affords considerable scope, at least in certain particular tracts of the country. Butter which is the most important if not the sole form in which milk fat is consumed (other than what is taken as part of the milk itself or cream) in Western countries forms only the raw material for the making of ghee in this country, in which form alone the milk fat is consumed almost universally in this country. The making of ghee (that is, the making of the preliminary or raw product, butter) accounts for quite 43·3 per cent. of the total milk produced. The consumption of butter as such is insignificant and may be said to be confined to Europeans and to Indians who have adopted European food or at least the bread and butter part of it.

In certain parts of the country where buffalo keeping is largely in vogue or which in addition are situated rather remotely from towns, there is no profitable outlet for milk as fluid milk and butter making is resorted to, which is later converted into ghee. The high fat content of buffalo milk, *viz.*, about 6 to 9 per cent., makes it eminently suited for butter making, and this indeed is the traditional method of the utilisation of buffalo milk. The butter can be kept for a few days and when the production of three or four days accumulates, it is either sold as butter to ghee makers or is converted into ghee and then sold.

The butter is made by the well-known household method, *viz.*, by allowing the boiled milk to curdle, and then churning the curds or to take only the top third or quarter of it which contains practically the whole of the fat and then churning only this portion: the butter is then removed by hand and after a little washing is set aside for sale. From the butter

maker's point of view this method has the drawback that the outturn is not as high as it ought to be; the butter moreover is not clean enough, as it cannot be washed free from all adhering or enclosed curds and therefore deteriorates badly on keeping, spoiling thereby the quality of the ghee which is eventually made from it. It is possible to avoid both these drawbacks by the use of modern methods, *viz.*, using a cream separator for separating the butterfat from the milk in the shape of cream and a butter churn of the barrel type for churning the cream, which allows of the butter being thoroughly washed free from curds and therefore rendered sufficiently clean. Such butter can keep better and the quality is such that it can be used as good table butter, and with arrangements for chilling, it can be put up into forms suitable for sending out in cartons or boxes for sale as such over long distances. In addition to this better quality of this butter which enhances its money value, there is also the advantage of an increased outturn which may range from 10 to 15 per cent. The method has also other advantages, *viz.*, the milk producer is set free from the task of butter making, large quantities of milk from several villages can be handled and a clean and uniform product of high quality can be produced. The milk suppliers can also take back the separated milk, *i.e.*, the milk from which the fat has been abstracted by the cream separator, which can be made use of for making into curds for home use, or for sale. The separated milk can moreover be used as fluid milk, for tea or coffee and for quite a number of purposes for which unseparated or whole milk is used. The butter can be sold in quantities large enough to attract wholesale buyers of butter for ghee making, so that co-operative production and sale become possible. Besides affording such material advantages to the producers, the organisation will be a boon to consumers also, as a supply of pure butter will then become readily available in the place of the adulterated and foul-smelling messy stuff now being brought for sale in the weekly markets serving these tracts. It may perhaps be of interest to mention

that in order to popularise such a type of society, the I.C.A.R. has extended very substantial help to one such started in the Madhya Pradesh, *viz.*, Jhallar in Bhainsdahi tashil. It is reported that six such societies are now working, all of them using the improved method and that their annual production of ghee amounts to 40 tons (Report for 1948-49).

CHAPTER VII

CO-OPERATIVE SOCIETIES FOR THE SALE OF EGGS

General features of the production and trade.—Eggs form another important product suitable for co-operative marketing and are recognised as such all over the world. Like milk the production of eggs is a side line in peasant agriculture and practically every agricultural family however small it may be and whether it lives out on a farm or only inside villages keeps a few fowls the eggs from which supplement the home food supply. After reserving some for hatching a fair surplus is left for sale, which is estimated at 60 per cent. of the total production. It is indeed considered such an important source of cash income, that the needs of the home are often ignored and the whole of the production set apart for sale. The production is practically all in the hands of the small producer and the marketing therefore is subject to the same disabilities as are incidental to such production. A good part of the production is purchased usually by itinerant dealers who pay weekly visits to the families, collect the eggs and then sell them to larger traders in the weekly market, these latter being the agents of still larger merchants or owning retail shops of their own in the towns. Middlemen are many and charges are high, making the retail price in the towns to the consumer disproportionately high. The actual producer seldom shares in any rise in the prices in the towns and even normally the price he receives is only a small portion which has been estimated at about 40 per cent. of the retail price. Producers have to sell only to particular buyers, being bound both by custom and by the obligation of an advance received from them.

The conditions are, as a matter of fact, the familiar ones common to the marketing of small-scale production and the remedies are also similar, *viz.*, the substitution of an egg-

selling co-operative society for the chain of middlemen. The requirements of such a society's success are also similar, *viz.*, loyalty on the part of members to market their eggs only through the society, and an efficient business management on the part of the society in establishing contacts, guaranteeing quality and effecting profitable sales. Usually the society undertakes the duty of testing the eggs and grading them, and of quick despatch and delivery to the buyer or the society's own retail shop. Production and supply are large and important in districts where families live on large farms, estates or gardens as in Malabar and Travancore and the west coast generally, and especially among farmers who do not belong to the vegetarian castes both here and elsewhere. It is these tracts which afford therefore the greatest scope for the organisation of Egg Selling Societies.

Testing and grading of eggs.—The eggs delivered to the society by its members are usually a mixed lot, comprising eggs differing in sizes, weight, colour, tint and freshness, not to speak of dirty eggs, or cracked or damaged ones. Freshness is really the most important feature and eggs are therefore tested for freshness, after the obviously unsound ones with cracked or broken shells are removed by mere inspection. As already mentioned they are for this purpose subjected to the candling test, in which they are held against a brilliant light in a darkened room; in a fresh egg the interior presents a homogeneous translucent look and the age of the egg can be judged by the appearance of this translucent mass and also of the top of the yolk on which the germ develops. The size of the air space in the egg is also an indication, and the larger it is, the older is the egg. All eggs not coming up to the standard are rejected and freshness is guaranteed in the selected lot. A similar test will be to drop them into a 10 per cent. solution of common salt in water; fresh eggs will just sink in this solution, while older ones will float. Similarly they are sorted according to sizes, either by hand or in a grading machine.

The latter is a great labour saver, and is quite suitable for a society handling a large number of eggs. It is also usual sometimes to grade eggs according to weights, which may vary from 16, 12 or 8 to the lb. and even heavier in special cases. Generally in eggs of the same age, the sizes correspond to the weights and a grading by size alone will be enough; but in special cases a grading by weight is also done, for which a special weighing balance is used which does the sorting automatically. A sorting for colour tints is also much to be commended and is sometimes done. A basket of one uniform colour tint is more attractive to the buyer and will fetch a higher price.

Eggs not coming to the required standard or show obvious defects are rejected and returned to the producer and only those accepted are credited to his account. It is sometimes customary for each member to be given a number and for him to stamp this number on the lot he supplies; this enables the society to correctly note in their books as well as in the pass book of the member the number credited to his account.

The society may in addition own and run a retail sale depot in selected places in towns, both to its own advantage and that of the public. It may be even possible in the case of really first class societies to take advantage of cold storage facilities in the cities where such may be available, to hire the necessary floor space and store surplus, and prevent deterioration and loss. Arrangements can also be made for transport in special packing cases, for the different grades, which may conform to the AGMARK or other standards and bear the appropriate stamp. This increases the safety and attractiveness of the consignment. Railways usually give special terms for returnable crates or containers and many high class purchasers like the big hotels and firms of caterers would prefer to buy the eggs in such boxes, with their guaranteed quality and also pay a higher price in proportion. In any case the society will thereby be building up a distinctive name which will be a valuable asset, in their

competition with the individual traders and bazaarmen. By virtue of its being a co-operative society it may be possible for it to borrow money at a moderate interest from co-operative banks for the normal needs like making cash advances to their members, for loans for buying birds of good breeds, either for raising pure flocks or for grading up with the local breeds. The society may also sell special feeds, medicaments, poultry appliances, etc., and all loans are advanced preferably in the shape of these articles, instead of in cash. The society can also make arrangements for prompt technical assistance when disease breaks out in any flocks and thereby prevent losses which are sometimes disastrous. The scope for the development of poultry keeping is very great and a co-operative egg selling society of this kind can put it on a sound and profitable basis and help it very materially.

The following particulars of the working of the Marthandam Egg-Marketing Society in Travancore may be found helpful in this connection. The area of operation is limited to seven miles, a walking distance for a rural population. The value of a share is Rs. 5 payable in 20 monthly instalments, and each member takes at least one share. The business is managed by a committee of seven members elected by the general body. Members bring their eggs to the society on two fixed days of the week, and these are tested, graded and stamped with the grade name by the Society's staff, entries are made in the books of the Society and of the member; once a month, the accounts are made up and the member is paid the price due to him. Eggs are wrapped in attractive wrappers according to their grades, packed in bamboo baskets in layers with straw, covered with gunny and sewn over, sealed and despatched. The Society does not sell to middlemen but direct to regular customers in the big towns who get their supplies twice a week in this way. Eggs which may go bad within three days of receipt are replaced by the Society at its cost in the next consignment. (Extracted from *Indian Farming*, Vol. V, No. 11, "Co-operative Marketing of Eggs," by H. S. Lodi.)

CHAPTER VIII

CO-OPERATIVE SOCIETIES FOR THE SALE OF FRUITS AND VEGETABLES

General features of the trade.—Fruits and vegetables are other products which lend themselves for co-operative sale admirably. They are usually brought into the market in small quantities by individual growers, consist of varying grades and quality and are delivered to stall-keepers in markets at prices dictated by them which are always much too low, compared with the price charged to consumers. The products have the additional disadvantage that they are of a perishable character and have therefore to be sold quickly. The result is a poor return to the grower, and an expenditure of time in bringing them to market and effecting a sale out of all proportion to the small quantity brought and the need for many middlemen from the whole-saler in the market down to the door-to-door vendor with his basket load. Produce, especially fruit, is bought by itinerant contractors, long before the picking is due, on advances; these latter are usually low and in any case fetter the freedom of the producer. It is true that the producer does not share the risk of a poor crop or a slump in the prices, but these are rare cases and the buyer is shrewd enough to protect himself; generally and in special cases when the damage may be total and disastrous like an act of God, the grower seldom insists on his pound of flesh and willingly foregoes part of his claim. In most cases the purchaser reckons a good year with a bad and is a gainer on the whole. There is also a very strong cohesion among these buyers, and fruits have to be sold only through them, of course on their own terms. Anyone who dares to try and sell independently finds himself either unable to do so or to sell at a price far below what he could have got if he had yielded to the usual practice and had sold to the merchant

at the outset. Such has been the painful experience of growers who have chafed under this tyranny and attempted to break it. In no case probably is there a greater incentive to form a co-operative sale society than in the case of fruits and vegetables.

Usurious rates of financing.—In the sale of vegetables and fruits, the sale by both ratail stall-keepers and by itinerant street venders or basketmen accounts for the bulk of the sales, and the way in which these petty sellers find the funds for the business is exceedingly harsh and almost ruinous. The customary method is that a professional money-lender in the market lends two or three rupees or even a rupee to these venders in the morning to enable them to buy the vegetables or fruits for the day's expected sale, to charge anything from half anna to two annas as interest per rupee for the day and to collect further this amount in advance and pay only the balance; the same evening the full amount of the loan is collected.

Unbelievable as it may seem this means that the money-lender collects by way of interest on every rupee about Rs. 10 to Rs. 40 per year. It is true that the amounts lent out are small, and have to be collected from several clients every day and also that a good few may not repay, but a levy of interest at this rate can cover quite a multitude of losses, let alone a few bad debts. The fate of the small vender-borrower who is subjected to this exaction may be imagined. A co-operative vegetable society or fruit society can comprise both producers who may deliver their produce for sale to the society and the petty venders who may buy wholesale from the society, and who, as members, can borrow from the society the money necessary for such purchase at rates of interest which may be considered a free gift, compared with the rates charged by the money-lender. Such an arrangement will be to the advantage of the growers and the venders, and even of the public; to the producers it will mean a permanent and satisfied clientele of purchasers for their produce, to the purchasers themselves, it will mean relief from a terrible load of handicap and both these factors

should have a reaction favourable to the efficiency of the distributive service to the public.

Damage in transport and handling.—Even from a larger point of view, the need for the improvements which can be brought about by a co-operative sale of these products is very material. The methods of handling are wasteful and primitive in the extreme; any one who has watched how fruit basket parcels are knocked about and thrown into the waggon or out onto the platform in railway stations must be astonished at the damage which this should eventually mean. Road transport is still worse. The damage by softening and rotting of fruit in the wholesale godowns is a sad sight and their disposal becomes a matter of serious concern in the sanitation of markets. There is no grading whatsoever, the bulk lots are in all stages of ripeness, and fully coloured fruits, half-coloured fruits, fruits large and small, sound fruits and fruits with blemishes, are all mixed together. Packing methods of modern days which are adopted nearly in every large fruit-growing country are practically unknown. There is no possibility of marketing such fruits in far-off populous centres, and taking advantage of the newer quick methods of transport like aeroplanes is unthinkable. Fruits of the choicest kinds like the delicious mangoes of the country cannot be despatched therefore to foreign countries, though they are produced in abundance and are also much appreciated abroad. Refrigerated railway fruit waggons or cold storage accommodation either do not exist or are just being provided to a very small and inadequate degree in some centres. Anyone who compares the way in which hundreds of cases of foreign fruit of many kinds arrive in India from Australia, Palestine, South Africa and other countries, perfectly sound, uniform in sizes and colours, every single fruit wrapped in attractive paper and stamped, and in perfect condition despite the long ocean transport of many days, with the packages of Indian fruits arriving in any large city must be struck with the immense leeway we have to make up in this field. Much can be done

to improve this condition by an efficient co-operative organisation.

Grading, pooling and payment according to 'points'.— It will be very desirable and even necessary in the sale of fruit especially, as indeed of all kinds of produce, to so arrange the sale that a producer who delivers high class fruit, such as for instance large sized ones, gets a better price than a producer who delivers fruits of a lesser quality or size. It will be obviously unfair to the former type of producer a large percentage of whose oranges or mangoes may be of the larger kind to be put on the same footing and paid at the same rate as the producer whose fruits may consist mostly if not entirely of small ones. The same remark will apply in the case of many other products as well, say for instance potatoes, among vegetables. A procedure of this kind in which all producers are reduced to the same level, irrespective of the pains they may have taken or the cost they may have incurred in producing the better grade, is not likely to promote or maintain their loyalty to the society, apart from the obvious unfairness involved. Some sort of grading of the product at delivery and payment according to this quality are essential.

Where sales are only of a simple character and each man's lot is sold separately either by auction or by individual bargain, then it may be presumed, and it does happen generally, that purchasers take due note of the quality (though not to the extent which is justly due) and pay appropriate rates, a higher one for a better grade and a lower rate for lesser quality. This naturally ensures to the member the fair deal to which he is entitled. On the other hand if the sale is not in individual lots but by being lumped or 'pooled' together, then some special method will have to be adopted to secure this end. Each producer's lot will have to be at least roughly sorted, if not graded in a regular manner, at the time of delivery and before it becomes mixed up with others' and the receipt granted to him must specify the quantities or numbers in each grade. Even if no elabo-

rate classification is made into several sizes or grades, at least two classes, a large and a small, will have to be made, and the member given credit accordingly. When the society pools the produce of several members into a large bulk lot of one or more lorry loads for example, it may be done either as two or three lots according to the grades decided upon or as simply one bulk lot, if the numbers or quantities in the different grades should be too small to warrant such separation. If sold in different grades it will be easy enough from the rates secured for them, to determine how much has to be paid for each member's produce, as its grade composition is known. If on the other hand the quantity is sold as one bulk lot, then some sort of a ratio will have to be fixed in the rates at which the two or more grades decided upon will have to be valued. This fixation of ratios will require much experience on the part of the management and the work is generally put in the hands of a small committee of competent members, usually two or three in number. These ratios may be fixed in terms of 'points', as is being done in the case of coffee marketing by the Indian Coffee Board. (A full explanation of the method will be found in the *Monthly Bulletin* of the Board for June 1950, which is commended for reference.) The member is credited with the number of 'points' due to him on this basis, as the composition of the lot received from him is known. The value in money of each 'point' is calculated by dividing the amount of the total sale proceeds of the pooled produce, after deducting expenses, by the total number of 'points' of all the owners of the lots sold. The number of 'points' credited to a member multiplied by the money value per point calculated as above will show the actual amount of money due to him for the produce delivered. It may perhaps be possible to devise simpler methods also, but the fact which has to be stressed is the need for a system of sale where a better type of producer and produce secures a fair and just treatment, equitably differentiated and recompensed as compared with those in a lower class.

The Grading of Eggs at a Co-operative Egg Selling Society

— Photo by courtesy of the Provincial Dairy and Farm Products Co-operative Society Ltd., Kalasipalayam, Bangalore. (Formerly the Central Egg Marketing Co-operative Society Ltd.)

A small Apiary of seven box hives in Coorg

— Photo by Author.

Some examples.—An oft-quoted example of a great co-operative fruit-selling institution is the California Orange Growers' Association, which markets the famous 'sun-kist' oranges of that country all over the U.S.A. and outside, by methods which are almost perfect in their excellence and which is powerful enough to dictate terms to the railway companies. A more striking illustration of the maxim "Union is Strength" cannot be thought of. Nearer home but of a humbler kind though with the same aims are the Coorg Orange Growers' Co-operative Society, which markets the so-called Coorg or loose-jacket oranges, and the Kodur Fruit Growers' Society which markets the tight-jacket or Satgudi oranges of that tract. The former is so well organised that nearly the whole of the produce of that State is marketed through the Society, which arranges for quick transport by its own motor lorries, owns wholesale depots in Bangalore, Mysore and Mangalore, runs retail sale rooms where fruit is graded and put up for sale, and the whole business is really managed according to the principles explained in respect of produce selling societies. Some noteworthy features in the Bye-laws of this Society are firstly, the advance to members of crop loans not exceeding 40 per cent. of the market value of the estimated crop yield, which is paid in three instalments in the season; secondly, the penalty for failure to deliver and sell the whole crop through the Society, which may be fines in the first instance and expulsion in cases of persistent default; thirdly, the collection of the whole amount of the advance immediately after sale and as a first charge upon the sale proceeds of the fruit, so that not only are members helped substantially but the Society is well protected against loss.

The value of the sales by this Society amounted to about Rs. 10½ lakhs (1947), while in the case of the Kodur Society, it was Rs. 40 lakhs in the peak year 1944–45, though it has since declined to Rs. 3·40 lakhs in 1949–50. Other noteworthy societies are (1) the Nagpur District Orange Growers' Co-operative Association Ltd., Nagpur, which

sells the well-known loose jacket type of oranges called 'Nagpur' oranges, collected from both members and non-members, and pooled and graded for export, and whose annual sale amounted to Rs. 1·81 lakhs; (2) the Jalgaon Co-operative Fruit Sale Society which sells mostly plantains, and whose annual sale was of the value of Rs. 7·73 lakhs (1949); (3) the Ahmedabad Co-operative Fruit and Vegetable Growers' Association, with annual sales worth Rs. 8·34 lakhs (1949); and (4) the Ahmedabad Potato Growers' Co-operative Association which markets not only ordinary potatoes intended for consumption but also seed potatoes both local and Italian and whose annual sale was of the value of Rs. 8·62 lakhs (1949) (*vide* also *Fruit Marketing Co-operatives*, published by the Reserve Bank of India, 1951).

CHAPTER IX

CO-OPERATIVE BEE-KEEPING AND HONEY SELLING SOCIETIES

A somewhat recent development in India is the keeping of honey bees and the production and sale of honey. It is providing a subsidiary or leisure time occupation for farmers and something of a pleasant hobby or pastime to many town-dwellers. Its special feature is that it involves very little investment and practically no day-to-day expenditure, unlike the others which we have been dealing with so far, such as the production of milk, eggs, poultry, fruits or vegetables. The bee colonies are easily established and they live, multiply and flourish and gather and store honey, the marketable product, by foraging for themselves from the nectar in the flowers that nature provides. Moreover once established, the colonies continue to flourish for many years, with some intelligent attention from the bee-keeper, provided no disease breaks out or the bee-keeper is grossly negligent. While the traditional source of the honey available in the bazaar to the public is that obtained from the forests from hives built by bees in a state of nature whether they belong to the species *Apis indica* which is suitable for keeping under domestication or from the ferocious large wild rock bee, this new development relates to the keeping of the former species alone under home conditions and capable of control and management much as though one kept a cow for milk or a few fowls for eggs. It is a large and well-established occupation, mainly of a subsidiary character in many parts of the world and the production is very large, especially in countries like Australia, New Zealand, California and some of the other States of the U.S.A. which are important exporting countries. The production from individual hives in these countries is remarkably high, and may go up to even 250 lb. per season. Conditions in India are however different and the production from individual hives may reach only some 20 or 25 lb.

on the plains and about 30 or 35 lb. in the hill stations as a maximum. Averages may be hardly one half of these amounts, but even then at Rs. 2 per lb. which is the ordinary selling rate, the income per hive is not negligible, especially when it is remembered that hardly any expenditure is involved.

Scope in India.—The industry has long been followed in certain parts of the country, notably in the western parts of the Mysore State and in Coorg, where the art of keeping bees under domestication is somewhat an ancient one. Though basically the same as this old method, the new method which is now being popularised and taught to the people is a great improvement in many respects. Without going into any regular description of the method (which is quite outside the scope of this book) we may draw attention to some of the features of the two methods. In the old method the colonies comprise what are called 'pot hives' (corresponding to the old fashioned straw skep hives in Great Britain), to which the colony is attracted and allowed to grow and function and flourish. The bees build the combs, store the honey along with the young grubs, primarily as their food in some combs and in others as a reserve or store for a honeyless season. In a 'pot hive', there is no sharp distinction between the two classes of combs or at any rate there is nothing to prevent a mixture. The extraction of the honey is crude, wasteful and dirty; the honey is removed generally by squeezing it out of the combs, in which process the brood is destroyed, the quality of the honey is lowered, the combs as such are destroyed and reduced into a lump of wax, and the whole colony has to be built up *de novo* with the advent of the next honey season. The new method is a great improvement because, firstly, the brood combs and the storage combs are quite separated, and the queen bee cannot pass into the latter to lay eggs and raise brood, so that honey can be extracted only from the storage combs without having to destroy brood and without spoiling the quality of the honey. The honey is extracted by a special extractor, and

it is such that the combs can be used again in the hive, the bees having only to gather and store honey, and not to manufacture wax and build a new comb for the purpose. Their energy is therefore concentrated in the gathering of honey, which naturally leads to a higher yield of honey. The supply of the new type of hives called 'box hives', the details of stocking them, and looking after the colonies, and the extraction of the honey, are at present attended to largely by the officers of the bee-keeping section of the agricultural departments, who do much propaganda work and assist and guide bee-keepers at every step.

The old and recognised centres of honey production as in the western part of Mysore and in Coorg are also very favourably situated for the purpose as they comprise much forest vegetation, with its wealth of flowers in great variety and profusion, giving a long stretch of flower-bearing season, keeping the bees busy gathering over a long period with a corresponding increase in production. They are also the tracts of coffee cultivation; the coffee bushes in the flowering season are remarkable for the abundance of flowers which cover them as with a mantle of snow; they are at that time alive with bees, which revel in the profusion and gorge themselves, and help incidentally in the fertilisation and setting of the coffee berries. In these favoured areas, individual bee-keepers may keep several hives each, sometimes twenty or more and the production becomes quite considerable, amounting to several gallons. In the plains and the towns where bee-keeping is being popularised, individual bee-keepers may own only a few hives each, perhaps not more than half-a-dozen, but frequently only one or two. The production therefore per individual and even in the aggregate is small and co-operative sale societies will be the ideal method of converting their products into money. Even in the case of the comparatively larger producers, nothing offers a better method of sale than through such societies.

Bee-keeping is being greatly stimulated in the U.P. and Assam in Northern India and in Mysore, the Nilgiri Hills,

Wynad, Coorg and other high elevation areas in South India in addition to many towns and cities in the plains. The conditions which are favourable for successful bee-keeping have been described above, and wherever such conditions exist and bee-keeping is taken up, co-operative bee-keepers' societies should follow, almost as a necessity to help in the sale of the honey and in other ways.

Work undertaken.—The work of such societies will comprise firstly, the rendering of financial assistance to members in the same way more or less as many other sale societies which have been explained already; loans or advances may be made in cash or in the shape of bee-keepers' requisites (mentioned below) and recovered from the sale proceeds of the members' produce. Members will be under obligation to sell through the society alone, which indeed will be the best way for them to dispose of their honey. Secondly, the society will arrange for improving the quality of the honey. Individual lots of honey as delivered by members may differ in colour and consistency mainly and to some extent in the clearness, all of which can be made out easily by mere inspection and in the water content (or ripeness) which may not be so easily made out. These differences will arise on account of the kind of flowers which the bees visit, on the season and on the care exercised in the extraction and handling. Honey from the coffee blossoms, *honge* (*Pongamia glabra*) flowers or the cocoanut trees are light coloured, and somewhat thin in consistency, and honey from mango flowers will be thick and dark coloured, while intermediate tints and thickness may be also met with. In Europe, America and elsewhere the honey from clover is famous for its colour and consistency, being almost as clear and colourless as water, which as far as one knows is to be met with nowhere in India. Honey in the early season contains more water than later or 'ripe' honey and this is a fault which may injure the keeping quality of the honey. It may also contain suspended impurities like bits of wax, pollen, etc., and considerable air enclosed. The society will avoid all these uneven

and different qualities, correct the taints, remove impurities and put out one single standard uniform quality irrespective of the season or the producer. For all these purposes the honey undergoes in a large society some amount of simple processing, which consists in little more than mixing the different lots, so as to produce a uniform colour tint and consistency, heating it slightly to drive off the enclosed air and a little of the moisture, allowing it to settle to separate the sediment of suspended impurities and drawing off the clear purified honey for being bottled. Bottles and jars of standard pound or half pound sizes, and of some special design and with screw tops or other stoppers secure against leakage are used, and attractive coloured distinctive labels affixed and then sent out for sale. Thirdly, the society may employ a trained man to go round and inspect members' hives, rectify defects in time, extract honey for them by the special honey extracting appliance and generally to render technical assistance to them. Fourthly, the society will keep for sale to members, bee-keepers' requisites such as box hives and parts besides other equipment like comb foundation, veils, gloves, smoking bellows, queen excluders, honey extractors and so on. Lastly and above all the society will concentrate on the sale, by advertising, canvassing, contacting wholesale and retail dealers and stimulating both demand and sale in every possible way. The producer will be free to concentrate his efforts on the production side alone just as in the case of other sale societies for other products. Payment for honey delivered may be made to members at an agreed rate partly at the time of the delivery and fully after the year's accounts are made up, a bonus or rebate being paid in addition to the dividend. The organisation and working will *mutatis mutandis* be very similar to those of other sale societies described already.

Co-operative sale has become the recognised way of selling the honey now being produced by the new method, and central marketing institutions like Provincial Marketing Societies handle a large quantity of such honey and conduct

sales to other societies, both wholesale and retail. The different aspects of production are looked after by the officers of the Agricultural Departments and this special help is more or less indispensable at present for the proper development of the new industry.

As regards the income earned by individual producers, the following recent figures may be found interesting. It is reported that in the model apiary of 10 hives at the Government Bee-Keeping Centre, Jellicote in the U.P., during the year 1949–50, the highest income per hive was Rs. 60–5–0 and the lowest Rs. 17–12–0, corresponding to a per hive production of 35 lb. and 15$\frac{3}{4}$ lb. respectively. We have reason to believe that the yields in Coorg are decidedly higher, although actual figures are wanting. Even as it is "when we take into account the factors that the industry does not require any large investment of capital and that it takes up very little of the spare time of the workers the income should make it very attractive to large numbers of people."—*The Indian Bee Journal*, March and April, 1950.

It should be mentioned that a noteworthy Honey Selling Co-operative Society in South India is the Coorg Honey and Wax Producers' Society in Virarajapet; the processing and other matters described are as a matter of fact, those which are carried on and can be seen in this Society. The scale of operations of this Society can be judged from the fact that the quantity of honey bought from members and sold amounted to 19,292 lb. in the year 1947.

CHAPTER X

CO-OPERATIVE FODDER SOCIETIES

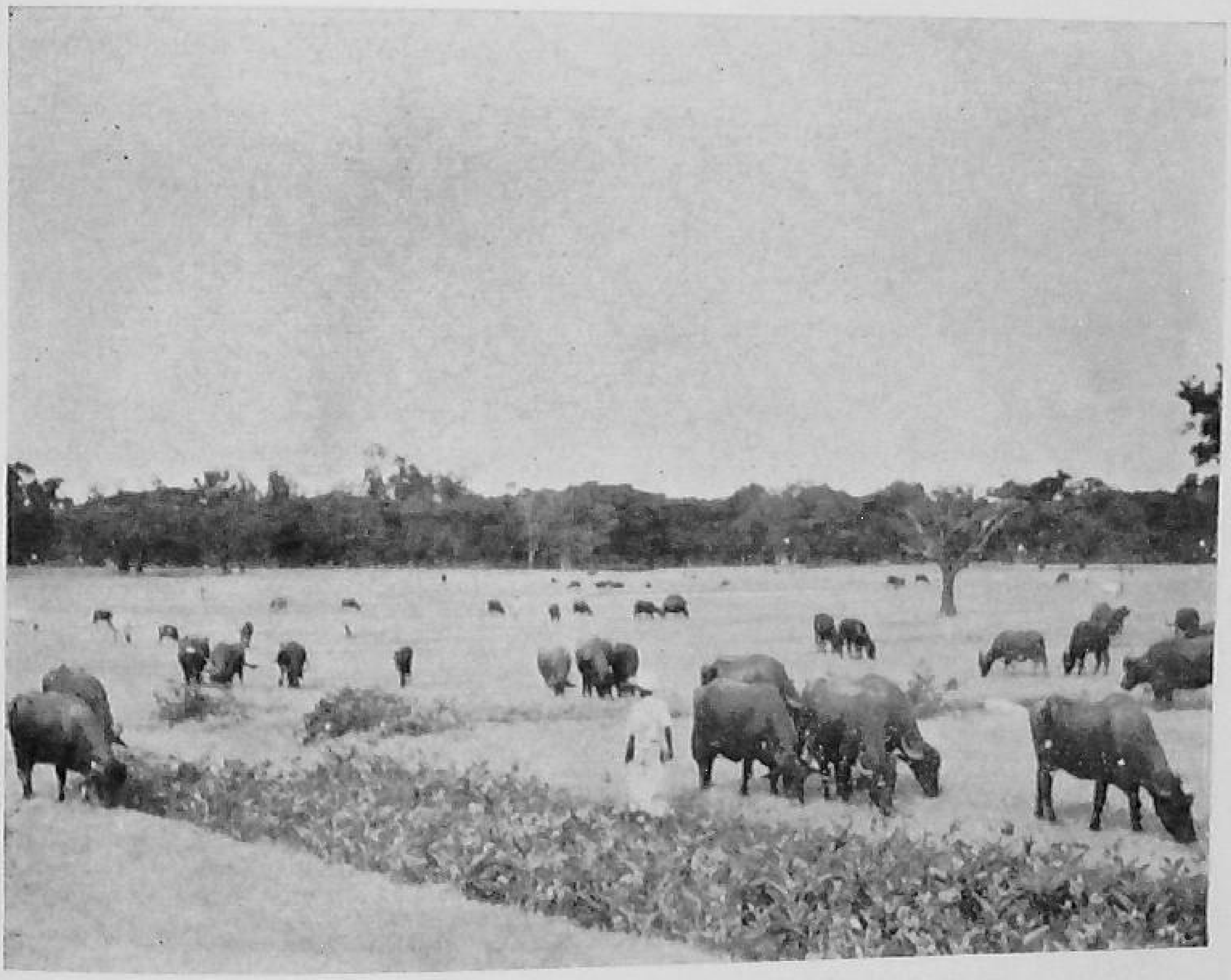
One of the distressing features of Indian Agriculture is the great dearth of fodder, the woefully pitiable condition of the village cattle and the mortality due to the lack of staying power in consequence, if not due to actual starvation. It is possible to mitigate this situation through the agency of co-operation, the scope and need for which may be briefly described.

Insufficient straw-fodder.—It is well known that there is very little special cultivation of crops solely intended for fodder, the straw, chaff, the dry leaves and stems and other bye-products of the cultivated crops alone being available as cattle fodder, the main products be they grains, pulses or other crops being used almost entirely for human consumption. The bye-products are coarse and poor feeds, as nearly the whole of the nutrients stored in them has been drawn into the grains and pulses, leaving them depleted almost entirely. Poor as they are they furnish the bulk of the fodder and may be said to be the main and most important source; unfortunately however owing to the precariousness of agriculture and the large number of animals kept, the supply is always too small to meet the requirements. During the rainy season the straw fodder serves to supplement whatever the animals can obtain as green fodder from the grazing grounds, the grass on the field margins, the thinnings and weedings, etc., from the cultivated fields, but in the hot weather months it forms the sole and only fodder available. It has to be husbanded with great care and only the working bullocks and the animals in milk receive a supply, and even they seldom get enough. The ordinary animals, the dry cows and buffaloes, calves and heifers have to go without and have to shift for themselves on the bare and parched countryside, which is only a euphemism for semi-starvation.

This is notwithstanding the fact that these animals may form the foundation stock for breeding.

Neglected village grazing areas.—The natural grass lands, the village grazing grounds or *gomals*, forest and waste land areas form important sources of green feed for all ordinary cattle and during the cultivation season these are the only sources available. Time was when these pastures were carefully looked after, so as to afford abundant grazing, shade and water for cattle and safety from wild beasts. Rules like the following framed to this end were enforced by kings and chiefs and village communities. "The king shall make provision for pasture grounds on uncultivated tracts." "Cowherds shall graze herds in forests which are severally allotted as pasture grounds for various seasons and from which thieves, tigers and other molesting beasts are driven away by hunters aided by their hounds." (Kautilya's *Arthasastra.*) At the present time however, these pasture lands and village *gomals* have greatly diminished in extent owing to the gradual and steady increase of cultivation; they are in a state of woeful neglect, overgrown with thorny scrub vegetation, cut up and badly eroded, grass growth meagre and heavily and indiscriminately grazed even at that, with the result that their grazing value is insignificant.

As far as the village *gomals* are concerned, they are grazing lands only in name; they are almost bare of grass and serve only as exercising grounds for the village cattle especially during the crop season when there is very little open or uncultivated land for them to roam about. These *gomals* moreover are the common property of the village and though belonging to every one they are in effect no one's property, judged by the attention bestowed upon them. This circumstance makes it very difficult to improve these pastures, however much it may be felt necessary and important. Still if some practicable means can be found for effecting improvements, then it will materially add to their grazing value. Moreover the benefit of this experience will be shared over a



Grazing areas of the kind suitable for being taken on lease by Milk Supply Unions or Fodder Societies

— *Photo by Author.*

very large extent of country, because they will affect and apply to every village, where the same measures could likewise be adopted.

Improvements by Better Farming Societies.—The improvements usually suggested are: (1) clearing of the scrub vegetation and setting free for grass; (2) the plugging up of gullies or the erection of cross dams across them along their course, to prevent the erosion from extending, but without interfering with the water rights of the tanks lower down; (3) the removal of mounds, the filling up of hollows and similar surface improvement; (4) ploughing and the sowing or planting of new grass or at least a stirring up of the surface so that the sward may extend; (5) planting and nursing up a few shade trees which have some fodder value, and which will not prevent grass growing under the shade, the babul being an excellent tree for this purpose; (6) fencing the area and dividing it up into two sections, or more if the area is very extensive, so that grazing may be in rotation; (7) the spreading of the manure on the land itself instead of collecting it for use as fuel or as manure to be used elsewhere; and (8) if possible, a restriction in the number of animals to be grazed by each family. Some measure of compulsory or obligatory action on the part of the villagers alone can do anything in these directions, and as at present, individual rights cannot be interfered with by any outside agency, the only way in which such curtailment can be effected is through the voluntary surrender by the individuals themselves of their rights to a village co-operative society that may be formed. Where a village has a Better Farming Co-operative Society functioning, this matter of improving the *gomal* in the manner indicated will form one of the most useful lines of work which can be taken up by it, along with many other lines of work mentioned under this head (*vide* page 186).

Grasslands proper and forest pastures.—There are large stretches of pastures which are either open grass lands or forest areas or hill sides where tree growth is the main

consideration and the grass growth underneath though incidental is important as grazing for large herds of cattle. According to location, rainfall and surface configuration their grazing feature may become the dominant one or subordinate to tree growth. There are also large low lying open stretches which may be too moist or covered with water in the rainy season but which become valuable grazing areas as soon as the rains cease and the water drains away or dries up, leaving the ground in excellent condition for abundant and luscious grass growth. Babul trees also abound in such areas and add to the fodder value of the pastures. All these areas are State-owned but some especially the open pastures (called *hullubannies* in Mysore), may be under private ownership. In any case these types of pastures form very important grazing areas and during the flush grass season lasting generally from September to February afford abundant grazing, to which cattle from far and near are taken and kept for the whole season.

Rotational grazing and improved management by Co-operative Societies.—The grazing value of these pastures can be greatly increased if some measure of control can be exercised, chiefly by way of rotational grazing. The grazing area will have to be divided up into four sections at least and the different sections grazed in succession. During the interval between two grazings the grass has time to grow and the effect is that there is a heavier growth of grass in the proper stage of ripeness in the whole area, the grazing is more thorough and young growth is not eaten up as soon as it appears nor trampled upon and the pasture damaged. The whole pasture can therefore carry a larger head of grazing stock than in the case of uncontrolled grazing. It may be possible also to suit the grass to the grade of the animals, if necessary, by letting in the better class of animals to graze down the best quality and the ordinary animals made to follow, polishing off what is left. After each section is grazed down and the herd has passed into the next it will be possible to spread the cattle dung evenly over the area, so

that growth may be stimulated uniformly and no coarse clumps and patches are formed. It will be also possible to work the pastures both for grazing and for hay making, the first growth being cut and dried into hay for being brought to the villages and the second growth grazed down or *vice versa*, according to the prevalence of bright weather, which is indispensable for hay making. The making of hay is not known in most parts of the country and a good deal of grass in many areas of abundant grass merely runs to seed and dries into woody stalks fit only for brooms. If hay making is taken up in such areas it will mean an enormous saving of good grass and add greatly to the fodder resources of the country.

Under the name of the Hohenheim system of pasture management, much has been done in Germany to enhance the grazing value of pastures but although many of these practices may not be practicable in this country, still the rotational grazing, hay making and other matters indicated above can be taken up without difficulty.

Many a co-operative organisation can take up the work to the great benefit of the cattle population, by increasing the grass growth on these many pastures which they are already making use of in an unregulated and inefficient manner. These pastures and grazing grounds can be taken on lease by societies and it is very likely that the Forest Department and private owners will look with favour upon such societies as it will mean both conservation and permanent improvement of the areas. Animals belonging to members can be accepted for grazing at reasonable rates of grazing fees, taken over and looked after for the whole season, the pastures being managed systematically in the manner described. These will be Co-operative Societies of cattle-owners which take up the work of providing grazing facilities to their members' cattle in the same way as other societies render various other services of the different kinds described in the foregoing pages. Such fodder farms will be eminently suitable for management by the Milk Supply Unions

now working successfully in many parts of the country. They may be worked as part of their own present function or as separate societies formed as adjuncts or subsidiary societies.

Boarding of dry cattle.—Where the need may be felt as in the case of dairy animals in the cities these fodder farms will also serve as dry cattle or salvage farms, in which dry cows and buffaloes can be boarded for a moderate fee during this period and then sent back after calving or a few weeks prior to calving to their owners. This is a much needed facility in many cities and co-operative fodder farms of this kind will meet this need admirably. It may be interesting to note that the Bangalore Dairy Cattle Society which is a cattle welfare organisation runs a co-operative cattle feed store and also a dry cattle farm as adjuncts.

Cultivation of fodder grasses by Co-operative Societies.—These pasture lands whether village commons or the woodland and hill pastures or private grass fields, etc., described so far, will furnish grazing only in the rainy season and for a month or two after the rains cease. During the rest of the year from about March to August they are of little or no value; they are either bare or contain hardy coarse struggling clumps or root stocks, besides shrubs and trees which furnish what may be called 'emergency' feed. This is a very trying period and as already stated, animals will have to depend only upon the small stocks of dry fodder or straw which may be available.

For green fodder during this period and indeed during the rainy season as well, one will have to depend upon the growing of fodder grasses on the cultivated fields in the same way as the ordinary grains and other crops are grown. It may be under purely rain-fed conditions, in which case the quantity will depend on the amount of rainfall and will also cease with the rains, or it may be under irrigated cultivation under tank, channel or well irrigation, in which case it will be available in abundance and also for a longer period if not throughout the year. As a matter of fact, farmers do grow a little patch of fodder jola along with their ragi crop

as green fodder, and under well cultivation it is customary to grow some fodder grass so as to afford green feed to the bullocks or buffaloes toiling hard at the *kapiles* or *mhotes.*

In most tank-fed areas and in nearly the whole of the channel-fed areas, the cultivation is confined only to one season, the rainy or flood season in the latter (July to December) and in the case of the former either in the rainy season or the hot weather or Vaisak (January to April, May); and in both cases, the land is left bare in the other part of the year. After the paddy harvest is over in December, there is still considerable moisture in the soil, which though it may be rapidly diminishing as the hot weather progresses, may still be sufficient for a fodder crop. The latter can be only precarious and of very moderate yield of course, but such as it may be it will furnish precious green fodder during this trying season. It is not usual to grow such a crop or any crop for that matter, because the fields are all open and the village cattle roam at large over them picking up what they can, and if there should be any crop on the land whether fodder or other, it will be grazed down in no time by these hungry stray cattle. The grower is helpless against this village custom and the field will either have to be fenced or watched day and night, if this is to be prevented. Another reason is the fear that the fertility of the land will be reduced by growing this additional crop, much to the detriment of the following main crop of rice. This is also a real fear, but the danger of this depletion can be largely avoided if at leguminous fodder crop is grown either pure or mixed with a cereal fodder crop. Thus sannhemp, cowpeas, guar, peas, horsegram and the like may be sown either by themselves or mixed with maize, oats, fodder jola. These legumes are restorative crops and far from depleting the soil will leave it enriched in nitrogen; moreover if the fodder is fed to the owner's cattle and the manure applied to these fields, then the depletion in other plant foods like phosphates, potash, lime may be minimised largely. The main difficulty is the danger of inroads by stray cattle and this will have to

be provided against and the only way to secure this protection is by co-operative action among the growers concerned. The fields will have to be watched in the same way as sometimes catch crops of cucumbers, gourds and other vegetable crops grown under such conditions are watched. Joint action will enable the growers to share the wages of one or more watchmen. It may be added that in view of the manurial value of the restorative crop water for irrigation is allowed in some areas at intervals of 15 days or so, so that a really heavy crop of fodder may be grown, which will make it worth while to incur this expenditure on watching. This kind of activity is also a fit line of work for being taken up by Better Farming Co-operative Societies.

Furthermore the practice of devoting fairly large areas to the growing of fodder grasses entirely is slowly coming in during recent years, especially in the tank-fed fields close to the cities, where the great demand for milk, the good prices realised and the keeping of costly cows and buffaloes, all demand and justify this form of cultivation. Perennial grasses like Rhodes grass, Guinea grass, Para grass, etc., which last many years are grown and these give a cut once in a month or six weeks, afford green fodder throughout the year and yield heavily with good manuring. The fields in such cases are well fenced against stray cattle and the soils are heavily manured and the money return amounts to a handsome profit on the investment. Such cultivation of grass is now resorted to by private individuals as a profitable business, for sale and supply to those who need it, *viz.*, the cattle-owners. This supply is subject to the same handicaps and difficulties to the latter as other forms of selling, to which reference has been made more than once.

Now these methods of growing green fodder crops have to be encouraged and it will be found that co-operative action is the most effective one in bringing it about. In the case of stray fields among dry land crops or under well cultivation or even in the better situated portions in the paddy areas, patches have to be cultivated by many individual owners

and the scope for co-operation lies in the influence exercised by a Better Farming Society, which should include the introduction of fodder growing in this manner in the villages, make it obligatory upon every member to grow a patch in this way and to assist them where necessary with the supply of seed. In the aggregate the area may amount to several acres and the advantage to the cattle of the village, especially the better class draft and milk animals, is obvious. It will be found that though indifferent or unwilling in the beginning, once the practice is introduced, farmers will appreciate it so much that it may become general without any particular stimulus or persuasion.

CHAPTER XI

CO-OPERATION AND CATTLE INSURANCE

Scope and need in (1) *Villages.*—The importance of cattle or rather oxen in Indian agriculture is too well known to need any detailed description. Oxen furnish the all-important motive power on the farm; they work the ploughs and perform the basic and most difficult operation of breaking up the soil for the year's cropping; they work the various tillage implements used for further preparing the soil, for sowing and for intercultivation; they thresh the corn by the age-old method of trampling the sheaves under their feet. They work the *kapiles* and raise water for irrigation and they do all the transport work, the carting of manure and the straw and the grain on the farm and of all produce to market. In addition to these work-bullocks which are always of the better class of stock and are expensive, there are ordinary cattle also kept for the sake of the manure, for dairy products, and also for breeding, all of which contribute a little work at threshing time. Bullocks for ploughing, cart work and *kapile* work are costly and form the heaviest investment of the farmer, on which consequently great care and attention are bestowed. They are indeed looked after almost like members of the family, and often even more carefully. Any damage or disablement to them is a serious blow to the farmer and loss by death is a calamity of the first magnitude. Heavy debt is generally incurred in the purchase of bullocks and the chronic indebtedness of the ryot can in most cases be traced to one or more fatalities of this kind, which make it impossible for him to shake off the debt. The break in the year's crop raising which such death or disability causes means either a total cessation of cultivation or a poor performance with borrowed bullocks or with cows and other inferior cattle. A poor crop or no crop is the result, which simply means fastening the debt

more tightly on his shoulders. It is also a very sad feature and an irony of fate that in a country where cattle are of such great importance, there should prevail at the same time serious cattle diseass and epidemics, whose incidence aggravates the ryots' misery.

A mitigation in this situation is one of the urgent and crying needs of Indian agriculture, both from the point of view of efficient crop production and of the removal of one of the root causes of the ryot's indebtedness. Vigorous State action is no doubt being taken in one important direction, *viz.*, the prevention and cure of diseases by the Veterinary Officers and much has been accomplished in recent years. By means of prophylactic inoculations carried on extensively, against some of the dreaded diseases like rinderpest, black quarter, anthrax, and H.S., through the agency of an increasing number of veterinary hospitals, and through mobile corps of officers, the havoc by disease is being checked to a large extent. Nevertheless outbreaks are by no means infrequent and losses thereby are still a common feature in the villages. Relief from another direction has therefore to come in order to meet the situation, and that obviously is some form of insurance, which will secure to the owner at least a part of the value of the animal he loses and will imply relief to that extent.

(2) *In towns and cities.*—While this is the state of affairs in the villages and with regard to agriculture in general, there is an increasing need for a similar relief in the towns and cities, with regard to milk cattle. Professional cow-keepers and private citizens have begun to keep costly cross-bred cows and heavy milking buffaloes in increasing numbers, which are subject to similar risks to an even greater extent, because in addition to their greater susceptibility to disease there is the risk incidental to parturition, and as the animals are usually very costly ones, loss by death means almost a crippling misfortune. Many a man dreads to invest in such animals for this reason and would much rather keep several inferior animals instead, although all of them together

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may not yield the same quantity of milk as a single high priced cow of the same value, and may involve at the same time a larger expense in feed and upkeep. This circumstance greatly retards the introduction of better milking animals and a scheme of insurance is about the only way of improving matters.

That there is thus great need and scope for the insurance of cattle is amply clear, and it is only a question of the most appropriate agency for carrying it out. Many European countries are reported to have adopted the co-operative method with advantage, although cattle insurance itself is not as widespread or rapid, as we may suppose. The reasons probably are that farm buildings including dairy barns are largely insured against fire, that diseases are not so prevalent, that feeding is liberal, and that parturition risks are separately insured, and the need for insurance of the kind required in India does not arise to the same extent at all. But the co-operative insurance against risks of farm cattle is said to have proved a great boon, and "to have in a sense revolutionised small men's live-stock keeping in Europe, not only in reducing loss by mortality—such as is only too well known in India—but also reducing cost by the greater vigilance and local and personal knowledge enlisted. Co-operation has proved itself not only a remarkable cheapener of insurance but also of making insurance far more effective." (H. W. Wolff, *Co-operation in India.*)

Some of the difficulties and how they are overcome.—It is surprising that in India despite its special need, no serious consideration has been bestowed upon the subject to work out a suitable scheme for such co-operative insurance. This is all the more inexplicable, because in the early years of the movement, a very successful beginning was made and very noteworthy progress achieved in Burma and the little Province of Coorg. It was in Burma, however, that the progress was most striking; during the years 1912 to 1916, as many as 305 co-operative cattle insurance societies were working satisfactorily. It may be remembered that Burma was

part of India at the time. All the difficulties which are being brought forward as great obstacles to the starting and working of these societies have been duly taken into consideration and amply provided against in the Burma societies. Before mentioning some of the provisions in the Burma scheme we may briefly draw attention to the difficulties that are said to stand in the way.

(1) There are no reliable data regarding the mortality of cattle sufficient to enable the actuary to fix the rates of premia to be paid. (2) There is the common practice of selling and exchanging animals once a year if not oftener, which is very prevalent in some parts of the country, so that the ownership of an insured animal changes during the currency of the insurance, leading to complications. (3) In the case of dairy animals, the value varies with the year of the lactation, increasing up to the third or fourth and going down thereafter, so that it further increases the difficulty of fixing the premium which will depend upon the value. (4) The prevalence of epidemics, especially rinderpest, the mortality from which is serious and which makes the risk too great for any insuring agency, and especially if it should happen in the initial years of the agency. (5) There is always room for fraud, either by substitution of an old and infirm inferior animal for the insured one or even bringing about the death of an unwanted animal and claiming the indemnity. (6) The insurance premium fixed will usually be found too much for the ryots to pay, and still more so if it should be due to be paid at frequent intervals. It is true that these difficulties exist and some of them may be considered by actuaries to be too great for a practical scheme of insurance, but it may be doubted if they are so insurmountable as to make insurance impossible. After all, the insurance does not relate so much to death in a normal way due to age, but to death somewhat like an accident, and the insurance will partake of the nature of an accident insurance, and the period of insurance may be made as short as one year, but renewable. In practice moreover the fixing of a premium rate more or

less approximately and in an arbitrary manner will generally meet the case to a reasonable degree, although it may not be based on quite accurate data. When animals change hands the insurance may either lapse or the new owner may be allowed to continue it, if he chooses. In respect of disease, conditions have greatly improved as we have pointed out, and a compulsory inoculation or other treatment can be made a condition in all insured animals. In fact not only compulsory inoculation when disease breaks out but the observance of ordinary sanitary practices, the avoidance of evil customs, and a resort to competent veterinary officers in the case of injury or illness may be prescribed as conditions. As regards fraud, the limiting of the area of insurance to single villages or to a small neighbourhood coupled with the responsibility of the local committee, will make it very difficult if not impossible. The same feature, *viz.*, the limited sphere of operations of a society with its local committee of experienced residents will also make the valuation much easier than it will otherwise be, the age, performance, price at which bought and other details being more or less well known to them. Moreover if the insurance should relate to animals of the better class whether draft bullocks or dairy cows and buffaloes, owners will neither be unable nor grudge to pay the premium on the due dates. That all these difficulties have been anticipated and well provided against and cattle insurance societies have worked successfully shows that in practice it will be easy to overcome them. In any case such cattle insurance is one direction in which co-operation will prove of the greatest service to agriculture.

Features of the Cattle Insurance Societies in Burma.—Reference may now be made to some of the features of the cattle insurance societies of Burma, which may prove both instructive and interesting in this connection. The societies confine their operations to single villages, and both plough cattle and buffaloes are accepted for insurance, which are between the ages of 4 and 12 years. Each animal is valued twice a year, and the premium which is fixed at 5 per cent.

of the value of the animal, is payable in two half-yearly instalments. The indemnity payable is only two-thirds of the value of the animal, the value being of course what has been put on it at the beginning of the half-year. The hide and carcass become the property of the society, and their sale proceeds are credited to the society. Valuations are made half yearly, by three experts appointed yearly by the general body, to whom also belongs the duty of vouching the death of the animals. Substitution is permitted if values are equal. If the animal is sold away, the premium paid will not be refunded, unless the sale was one decreed by a court of law. Insurance covers death by contagious diseases like rinderpest also. No indemnity is payable if the death or loss is due to war, riot, or rebellion; to theft or loss by straying; to journey by rail, steamer or boat; to action of third party, who is legally bound to make good the loss; in the case of contagious diseases where the member has failed to carry out the rules and lastly to ill-treatment or neglect by the owner.

Of the local committee of experts referred to above, H. W. Wolff says, "Local committees are in the best possible position to judge the value of an animal insured, of the amount of loss sustained, and of the portion of it to be recovered by the sale of the hide, etc., to supervise the owner in question and guard against fraud and the incurring of needless risk by carelessness."—*Co-operation in India*, by H. W. Wolff.

A most interesting and perhaps original feature of the Burma scheme is a *system of re-insurance*, with a central society, which materially helps and buffers the local or village society against payments of heavy indemnities and more or less makes up for the lack of very large numbers of insured animals. Under this arrangement, all the village societies are affiliated to the central society to whom one-half of the premium paid for each animal is sent, together with the details of the animals insured and their valuation every half-year. When an animal dies, the central society meets half the indemnity payable, the other half being paid by the

village society (*vide* Panchanandas Mukerji, *The Co-operative Movement in India*, for a good account of these societies).

At the end of June 1916, there were in Burma, 305 societies with 5,045 members, with a risk insurance for Rs. 2,87,061, of which Rs. 1,13,050 was the risk re-insured. The premium collected in the year was Rs. 9,737 and the amount transferred to the re-insurance society was Rs. 4,022. The claims paid during the year amounted to Rs. 685 and the society had at the end of the year funds amounting to Rs. 10,671 (*vide* "Cattle Insurance in India," by A. E. English, I.C.S., *Agric. Jour. of India*, Vol. 12, No. 4, 1917). Many things have happened since then in that country, consequent on the upheavals due to wars, enemy occupation, and divers violent disorders, and this structure built up by an enthusiastic officer must have tumbled down long ago. It is fortunate that this valuable record has been left which may afford both encouragement and guidance in the starting of insurance societies for cattle in India at present.

Disease control only an aid and not a substitute.—We may note that it is contended by some that the difficulties in working a scheme of cattle insurance, co-operative or otherwise, are too great and that instead we should concentrate efforts on an efficient veterinary service and on the measures for stamping out infectious diseases as soon as they break out. The importance of adequate veterinary assistance and satisfactory control measures is too great to be ignored or minimised, and the more adequate and satisfactory they are the less will be the risks to the life of cattle; but neither disease nor death can be avoided even with the very best arrangements for disease control. Veterinary help even at the best may fall very short of the requirements, and due to sudden accidents or disease animals may succumb long before such help arrives or the treatment may not cure the animal. Such cases are neither few nor unusual. As regards outbreaks of epidemic diseases, the control measures are so many and so difficult to enforce, that a certain amount of loss

always takes place before the outbreak is brought under control. The prompt or immediate report of the outbreak, 'stand-still' orders, compulsory segregation, and preventive inoculation of all cattle in the concerned regions, and the safe disposal of carcasses, all of which are important measures to be simultaneously and effectively enforced, are too difficult to achieve in practice even where the necessary legislation exists. The result is that the loopholes are many and control can therefore be neither quick nor effective. It must be recognised therefore that the provision of such veterinary service and control measures cannot do away with the need for insurance which should also be provided for and relief against loss afforded, to the extent possible, through some practical scheme of insurance, preferably through co-operation.

CHAPTER XII

CO-OPERATION AND THE CONSOLIDATION OF HOLDINGS

A line of rather difficult work but one of fundamental importance in the betterment of agriculture which has been found suitable for being carried out through the agency of co-operative societies is the consolidation of holdings. It is a deplorable feature of Indian agriculture and one of the greatest obstacles to the betterment of farming that not only are the holdings exceedingly small but that they are made up of a number of small fields scattered in many places. Of these two the former is inevitable as long as agriculture continues to be the main occupation of the people and the available cultivable land has to be divided among an inordinately large number of holders or families. The situation in this regard is steadily deteriorating and the size of average holding is going down in nearly all the States in India, which should be a matter of deep concern. A remedy for this situation can come only as the pressure on the land is relieved by the creation of large industries or other occupations which can draw away the population from the land. Any artificial creation of large holdings which will mean the squeezing out of the very small holders can be real and permanent only to the extent that the displaced holders can be absorbed by such industrialisation or diversified occupations. In practice both movements will go hand in hand, without the one waiting on the heels of the other.

As regards the second, *viz.*, the problem of scattered fields or fragmentation as it is called, the situation is capable of being remedied without waiting for any such development, because it involves only a redistribution of the fields without any change in the extent of the individual holdings. Moreover such a redistribution will in any case have to be made, if self-contained farms whether large or small have to be carved out.

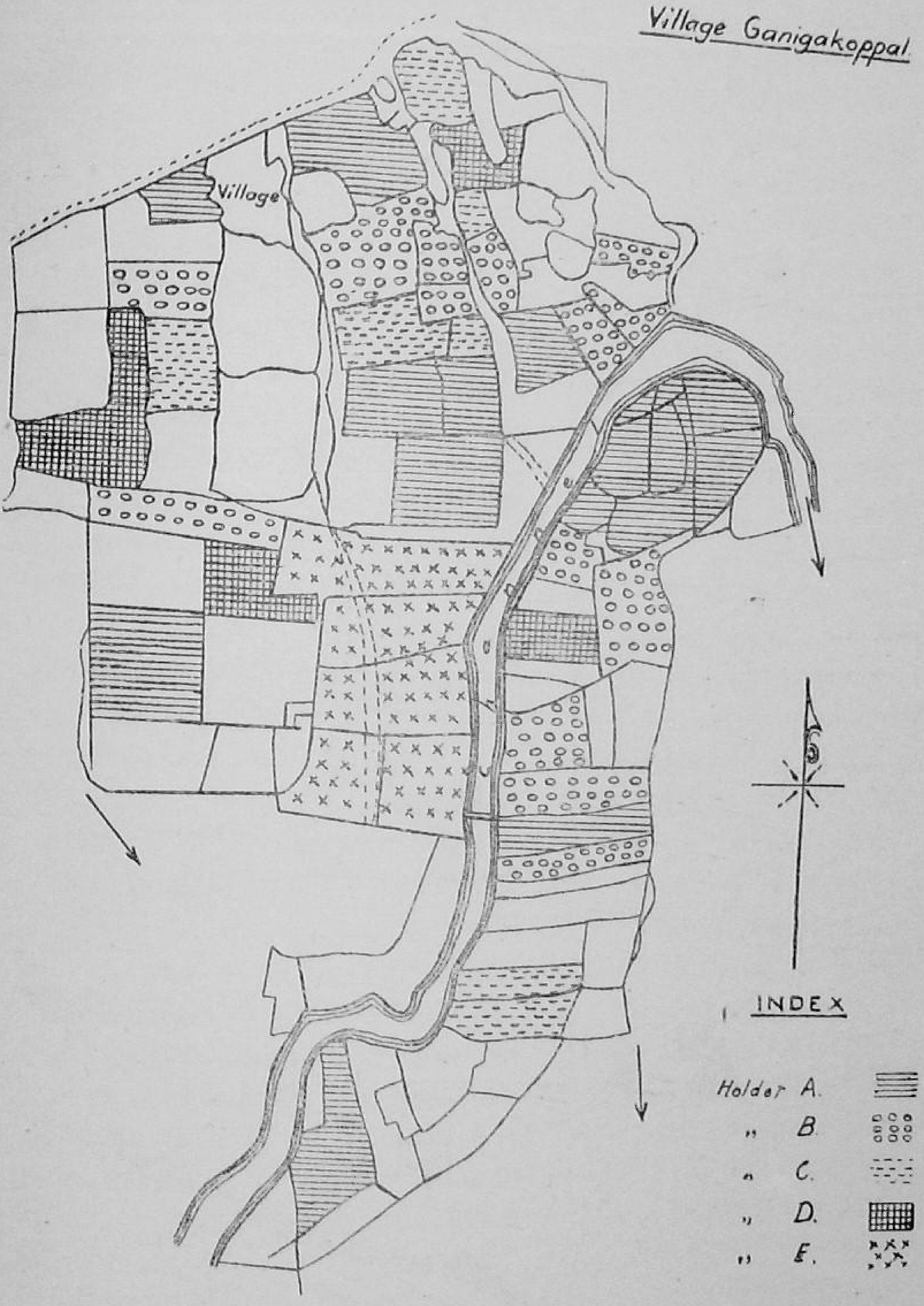
The evils of this fragmentation are fairly well known but will bear some specific mention, in order to bring out their importance. It implies a great waste of time and effort on the part of the farmers as they have to move with their bullocks and implements to and from distant fields for their daily work on the land. There is the serious waste of good land in the form of the area taken up by the unnecessarily large number of field bunds, which have to surround every individual field and which may amount from 10 per cent. to 25 per cent. In one case it was found that out of a block of 40 acres, the field comprised only 30 acres and the remaining 10 acres or quite $\frac{1}{3}$ was taken up by the bunds. The carting of manure and produce in between the scattered fields under different ownership becomes difficult. The fencing of fields and the growing of valuable crops with irrigation from wells where possible, according to the wishes or enterprise of the owner also become difficult, while watch and ward for all the fields becomes expensive. It is impossible and certainly not worth while for the owner to dwell on the holding and give it all the benefit which such residence of himself and his family therein implies. The creation of self-contained farms, whether large or small, abutting on and served by roads, capable of being enclosed in one block and provided with farm house for the farmer's dwelling and his live-stock, which are all important conditions of farming, become in fact quite unthinkable under present conditions. Moreover in the many systems of co-operative or collective farming which are being increasingly favoured, the consolidation of the holdings or the extinction of this fragmentation will be a fundamental requirement.

Though it may be needless to labour the point, it may be of interest to note the following numerical particulars of the state of affairs both in respect of the small extent of the holdings and of the degree of fragmentation. The average holdings in the different States of India are as below: Bombay 11·7 acres, Central Provinces 8·5, Panjab 7·2,

Madras 4·5, Bengal 2·4, Assam above 2, U.P. 6·0, Bihar and Orissa between 4 and 5, Mysore 6·5, Hyderabad 12.

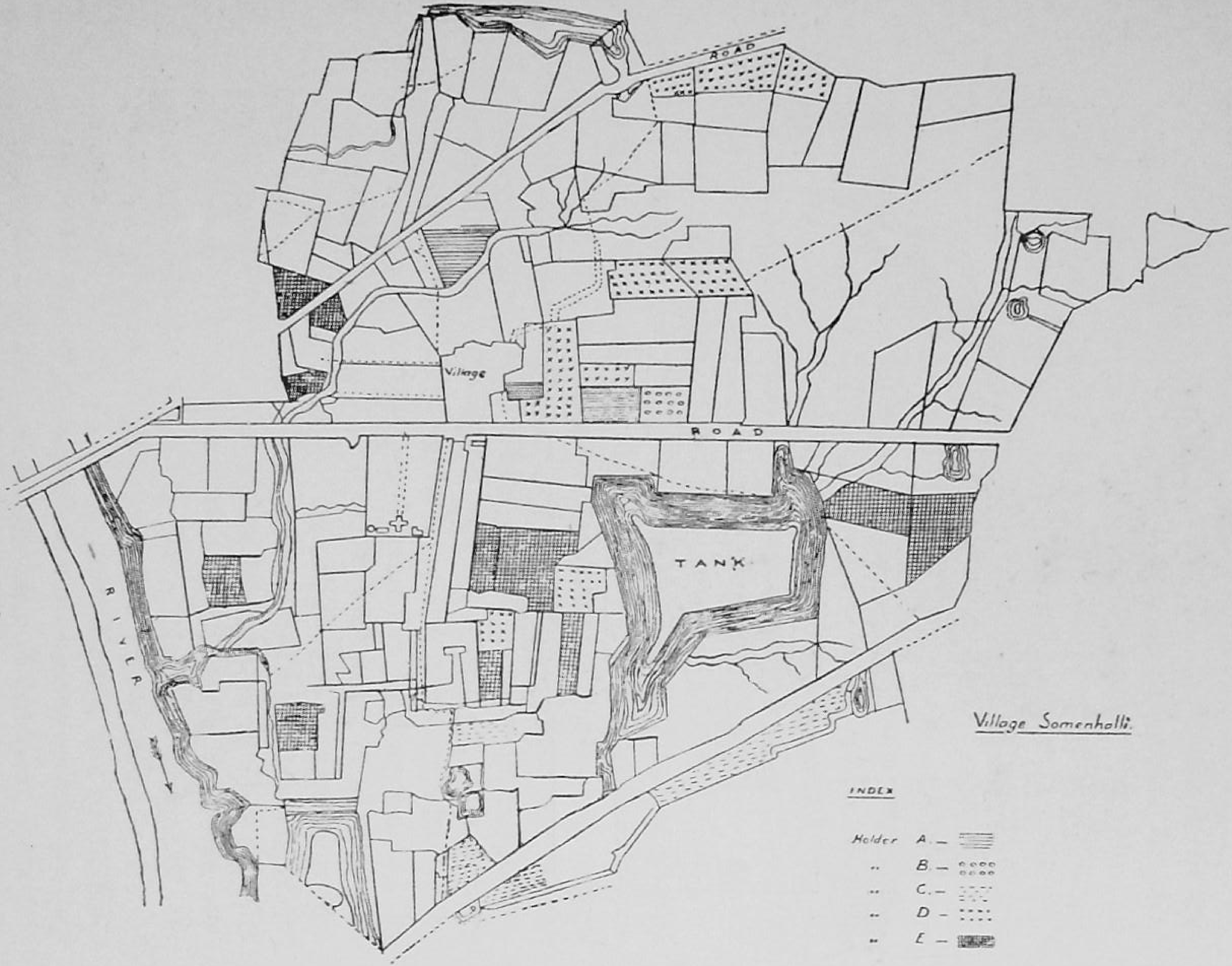
As regards fragmentation in Mysore 43 per cent. of the holdings were in one block, 43·4 per cent. comprised between 2 and 5 plots, 11·3 per cent. comprised 6 and 10 plots and 3·3 per cent. comprised more than 10 plots, in the villages surveyed. The accompanying village plans of two Mysore villages showing the fragmentation of the holdings of a few holders will also give a graphic picture of the position (taken from the author's publication, *A Note on the Consolidation of Holdings in Mysore*). A similar study in Hyderabad in three districts shows that out of 94 survey numbers, 7 were of more than 50 fragments, 3 comprised between 40 and 49 fragments, 37 comprised between 30 and 39 fragments and 44 comprised between 25 and 29 fragments (*Report of the Agrarian Reforms Committee, Hyderabad*, 1949).

The evils of fragmentation have been fully recognised and various measures have been taken in the different parts of the country to solve the problem. In India the problem is complicated by several circumstances peculiar to the country. Firstly, the fragmentation is the natural consequence of the laws of inheritance prevailing in the country according to which a parent's landed property has to be divided equally among the children, so that as long as the law remains as such, any measure of consolidation carries within it the seeds of its own disruption. Measures calculated to secure both objects, *viz.*, the consolidation of the present holdings and the prevention of their being divided up after the lifetime of the owner are very difficult to devise and enact. Secondly, the need for equitable division of the parental property, so that each heir gets a share in all the classes of land—the rich, medium and poor, and in the fields both near the village and far away—also gives rise to fragmentation. Thirdly, small parcels of land are necessary for purposes of mortgage or sale, as land is practically the only asset of the villager on the security of which money could be raised, and as no one likes to sell or mortgage anything



Village Plan of Ganigakoppal

—· *Taken from the Author's publication, 'A Note on the Consolidation of Holdings in Mysore'.*



Village Plan of Somenhalli
— Taken from the Author's publication 'A Note on the Consolidation of Holdings in Mysore'.

more than the smallest piece necessary for the purpose. Fourthly, there is the practical convenience of the ease with which small parcels of land can be let or leased for cultivation, as they will suit the resources of the tenants. Lastly, there is the further complication that wet, dry and garden lands lie in different zones, such as below tanks or channels, on the higher rainfed areas, and in the most favoured zone for garden crops respectively, and this circumstance makes a scattered holding unavoidable.

Attempts at Consolidation.—Despite difficulties, some States have made somewhat drastic legislative provision, to prevent fragmentation and even against the transfer of the land to people or castes other than actual cultivators. The Panjab, Central Provinces and Bombay provide examples of such bold and optimistic action. Others have deemed that the difficulties, especially the laws of inheritance, far outweigh the advantages and have adopted a policy of *laissez faire*. Others would trust to the effect of time and economic progress. It cannot be denied that such progress is very important, because with the present poverty among the farming classes, land is bound to be let and farmed in small parcels, even though it may be under consolidated ownership, and even though fragmentation may be forbidden by law.

Measures have therefore been taken to tackle the least difficult type of work and have also confined themselves to the immediate possibilities without trying to provide against the fragmentation which may happen in the future, in the hope that the advantages of consolidated holdings would by then have been so well realised that a change or reversion to division will be viewed with disfavour by the parties concerned and fragmentation may either be totally avoided or a mitigation effected by reducing it to a minimum.

These measures comprise two, *viz.*, (1) by Government action by means of a Consolidation Act, which empowers Government to introduce consolidation in a whole village if a certain percentage of the landholders, generally two-thirds, who also owned not less than three-fourths of the

total area was willing to adopt it, or which empowers Government to introduce consolidation straight away without this qualifying condition, if it was deemed desirable to do so.

(2) Co-operative action, *i.e.*, by voluntary agreement among the villagers through the agency of a co-operative society into which they were organised for the purpose. It must be added however that a cent. per cent. voluntary agreement does not accrue in practice even under the best circumstances. As the lack of such wholesale agreement was hampering the progress to which a large majority was agreeable, this provision has had to be modified or diluted down, so that it is a sort of compulsory co-operation (if such a contradiction in terms is permissible) which is part of the scheme. This kind of compromise appears indispensable; as a matter of fact even with this material help it may not be easy to make societies function smoothly. Facilities are also afforded by Governments by way of substantial concessions, like the waiving of the registration of relevant documents, the remission of land assessment for some years, the employment of the technical survey staff necessary and so on, which should go some way in inducing the holders to join the society and agree to the consolidation.

Work of Consolidation Societies.—The work to be achieved by such Consolidation Societies will comprise in its simplest form, the arranging for (1) the extinguishing of the very small fields, by persuading owners to part with the fragment by sale or other agreement to a neighbour, (2) an exchange of distant fields similarly with those which are near, and (3) generally for exchanges of other fields also, so as to get all the fields of each holder as far as possible into one block, whatever its extent may be. The society may also attempt at the same time another simple line of work, *viz.*, (*a*) the providing of cart tracks or lanes or pathways, along a convenient alignment, which will serve as many fields or holdings as possible. The acquisition of the necessary land for the purpose will also have to be arranged for by suitable exchange

or by purchase from funds contributed by the beneficiaries, in such a way that the alignment will not cut up holdings but will rather skirt them. (*b*) When any partitioning of lands among the heirs of an owner takes place or again when transfers by sale have to be effected the society can also exert its influence and see that fragmentation is kept at a minimum. A similar effort will have to be made whenever opportunities to promote consolidation occur.

In the case of wet lands, much scope will be found to exist for the elimination of the very small plots by one or other of the above methods. In the case of tank-fed areas, an old custom was the laying out of the land in long strips extending from the tank bund to the end of the *achakat*, so that all holders had equal advantages in respect of facility for water, and it was within these strips that fields small or large were laid out to suit the exigencies of rice cultivation. This pattern has changed greatly on account of the transfer of fields by sale, but it will be well to restore the pattern as part of the consolidation by the society. In the case of channel-fed rice fields on steep slopes, as in the channel-fed tracts of Mysore, individual holdings will have to run in a strip beginning from the channel at the top and running down to the drainage ditch at the bottom of the valley. Holdings thus lying along the slope have many advantages over those lying across the slope. Fields can then be irrigated according to their needs without prejudice to other fields which may not need it and which may be in the possession of other owners. Moreover the fertility due to heavy manuring by one holder will be confined to his own holding and not be washed down into fields belonging to others. In this and other ways the society will find much scope for useful work in these areas.

Need for selection of favourable villages for consolidation.—There is considerable difference between villages in the need for consolidation and a careful selection will have to be made, so that societies may be started only in those where the need and the scope are really great and where

therefore the benefit of consolidation will be much appreciated. For example, the dry land fields (at least in Mysore) are fairly large in extent and in the black cotton villages the fields are very large and may extend to five to ten acres, so that in neither case do they suffer from the disadvantages incidental to very small fields. In many villages, some scattering will be unavoidable because holdings may comprise wet, dry and garden fields, and they can only lie distributed in these different zones. Likewise where extensive well cultivation prevails, holdings may be fairly large and in a self-contained block as in a consolidated holding, properly fenced, and also provided with a farmhouse. In the result, the magnitude of fragmentation and its nature will have to be looked into carefully and suitable villages alone selected.

The compulsory element.—As already stated an element of compulsion or automatic acquiescence of a minority in the decision of the majority will form a *sine qua non* in the organisation and working of such a society and a provision therefor is usually embodied in the bye-laws. Model bye-laws for such societies provide among others that each member agrees to submit to (1) any agreement (in the distribution of the fields) approved by two-thirds of the total number of members and (2) any arrangement approved by two-thirds of the total number of members in case of any future partition or rearrangement of the consolidated area in which he may be concerned. The following is a specimen of the kind of undertaking to which each member has to agree:—

Every member joining or being admitted to the society shall sign a statement that he

(1) agrees to the principle of the rearrangement of scattered holdings so as to secure more compact blocks of fields for each owner;

(2) agrees to submit to any arrangement approved by two-thirds of the whole number of members in a general meeting;

(3) agrees to permit rearrangement of his lands in accordance with any such scheme and to give possession in accordance therewith for ever;

(4) agrees to submit to arbitration (as provided for in the bye-laws concerned) all disputes touching the business of the society (including disputes as to rights, boundaries, rents, responsibility for land revenue and cesses and possession of the lands affected by such scheme) that may arise during the existence of the society; and

(5) agrees to submit to any arrangement approved by two-thirds of the whole number of members in a general meeting, in case of any future partition or rearrangement of the consolidated area in which he may be concerned.

All transfers of possession in accordance with any such scheme of repartition shall be permanent (Model Bye-laws, *Madras Co-operative Manual*, p. 143).

Progress made.—All these difficulties mentioned above and many more have been duly taken account of by the different States which have acted in the matter and they account for the general hesitancy and even disinclination of some States to pursue the matter, and for the movement to be of an experimental nature even in the best of them, needing frequent revision in the legislation. Even the whole-sale buying up of the land of the village by Government and redistributing it into 'economic' holdings of an impartible character has been suggested as a consequence. Such State action can no more be unreasonable or unjustified than the compulsory liquidation of zamindaries that has been effected.

It may be noted that a great amount of successful work in this line of activity has been achieved by the Co-operative Movement in many parts of India. "Thus in the Punjab by 1945–46, over one and a half million acres had been consolidated. Over a million acres had been consolidated in the Central Provinces and Berer by 1946. There has been

considerable activity in this line in the United Provinces and in Kashmir where this has been the most important agricultural co-operative activity next to credit." (*The Co-operative Movement in India*, by E. M. Hough.)

The whole question in this particular form is in a sense being by-passed and proposed to be attacked from a new angle altogether, *viz.*, by the introduction of co-operative or collective farming in which the consolidation of holdings will form a necessary part. Pending such large-scale projects, of a more ambitious character, much can be done in this one field of consolidation alone by co-operative societies and considerable benefit can meanwhile be secured as described above through propaganda and willing co-operation.

Prevention of fragmentation.—The prevention of fragmentation either in the holdings as they exist or after consolidation by co-operation or by direct Government action is a problem which is even more difficult than the consolidation itself. The most serious and almost insuperable obstacle is of course the present law of inheritance. Although this is a matter which does not strictly come within the scope of Co-operative Consolidation Societies, reference may be made to some of the methods adopted or proposed towards this end, as it is intimately connected with the problem of consolidation. Even at present, it is the practice in villages for the elders to see that fields are not divided into absurdly and unworkably small plots, by pursuading claimants to agree to some sort of exchange of fields which will avoid the need for this division,—a procedure which goes by the name of *parivarthana*. In the alternative, the right of one of the claimants is bought by the other, also at the instance of the elders, so that in this way also the division is avoided. As regards Government action, one of the earliest steps was the refusal to register as a separate survey number any field smaller than a specified minimum area. More recent methods consist in (1) fixing the extent of "standard areas," *i.e.*, an extent considered absolutely essential for efficient cultivation, and (2) in declaring them as impartible single

units. Partition, transfer and alienation which will have the effect of reducing them to less than this size are prohibited under penalty of heavy fines, and the transfers themselves are not to be recognised by Courts of Law. It is difficult to fix the extent of such standard areas, except somewhat arbitrarily and varying much with the tracts and soils concerned (see also p. 191). Nevertheless drastic provisions on these principles form part of the legislation on consolidation of holdings in Bombay, Punjab, Uttar Pradesh and Berar. As we have already stated, unless economic conditions improve and until industrial and other openings increase and agriculture ceases to be almost the sole occupation of the people as at present, the evil cannot be extinguished by mere law alone. The reason is that though fields or holdings may not be divided by metes and bounds, and the letter of the law may be thereby obeyed, they will still be leased and cultivated in small parcels, as long as there are tenants poor enough to take them. (For a full collection of the present laws in the different States, on consolidation, *vide Agricultural Legislation in India*, Vol. II—Consolidation of Holdings. Published by the Government of India, 1950.)

CHAPTER XIII

CO-OPERATIVE FARMING SOCIETIES

General features of co-operative farming societies.—In the preceding chapters we have explained the scope for co-operative effort in many phases of farming such as in the various farming or field operations, in the purchase and sale of seeds, manures and produce and in the securing of financial assistance. Co-operative societies can be formed for one or more among these purposes according to the requirements of the particular villages and the facilities for their satisfactory working, and the members' obligation is confined to their making use of only the facilities provided by the society. In all other respects they are free to act as they like. A member may grow whatever crop he likes, and in whichever of his fields as he chooses, and he may cultivate his lands in whatever manner he pleases. We shall now deal with societies in which the members co-operate in many, if not all, aspects of farming; the larger the number of such aspects, the more it approximates to the most efficient type in which the co-operation may be complete. In such societies, the land is held in common, or at any rate enjoyed in common, the various resources like implements, bullocks, wells and irrigation sources are also held in common, and the land itself farmed as one large holding, crops and cropping methods and the areas on which they should be grown being decided on that common basis and not according to individual choice, the produce being marketed in common and the expenses and income also shared in common. In an extreme form of co-operative farming, the members even board together dwelling under one roof and owning a common mess somewhat like a hostel or large family. Co-operative farming, however, comprises more than one type and reference is made to these types in some detail later on in this chapter.

Co-operative farming can be taken up on (1) new land being opened up for cultivation, a sufficiently large area being assigned for outright ownership to a co-operative society or granted to it on a lease for a very long period, almost in perpetuity; (2) on land already under cultivation and in the ownership of a large landholder, generally an absentee landlord, which is taken up on lease or an annual rental by a society for joint cultivation; (3) on land already belonging to the members proposing to take up co-operative farming as a society as in the case of an ordinary village.

The essential and chief distinguishing features will be (1) that the land is farmed as one single unit; (2) that the plots as they may exist in the beginning will be re-aligned, the separating bunds being removed so as to enlarge the size of the fields and only such retained or new ones put up, where necessary; (3) that the members (or original owners) possess only their proprietary rights but surrender their right to cultivate it in any manner they please to the society which will decide the method, area, manure, seed, implements to use, etc.; (4) that the produce will be sold by the society itself; and (5) that the members will be paid out of the produce or the sale proceeds thereof, according to the extent and value of the land which they may have contributed to the common pool, and according to the labour that they may have put in. It will be observed that while a non-cultivating owner or absentee landlord gets only a kind of dividend of the first kind, a cultivating owner gets both the first and the second kinds of payment, and that a mere wage-earner gets payment only of the second kind; (6) that the cultivation is strictly under control and (7) the labour each day of each member is carefully noted both in kind and duration, payment being made or adjusted, according to rate that may be decided upon per man-hour or day, for the particular kind of work. These various items of work relating to the management have to be attended to by a competent managing committee of the society and a correct maintenance of accounts and other records is absolutely necessary. More-

over the society has the services of a trained agricultural officer, generally lent by the Department of Agriculture, who will plan, supervise and advise in all the operations, and who as a matter of fact will be directly in charge of the management with the co-operation of the committee.

Advantages of co-operative farming.—The farming of the different holdings as one single unit will make it possible to cultivate particular crops in large single blocks in the area which may be best fitted for such crops, both on account of the situation such as high ridge, or slopes or hollows and of the soil such as loams, clays, gravelly and coarse, red or black, etc. In the ordinary way where each man grows or has to grow all the crops he needs on his land whatever its character may be, such suiting of the crop to the soil is not possible. Secondly, in the case of rice land in tank-fed areas, it will be possible to limit the area to be sown according to the amount of the water in the tank and therefore its capacity, and further to cultivate only those fields which may lie close to the bund and therefore with the least risk of failure. Otherwise, with individual rights and ownership, the whole area irrespective of its extent and its distance from the bund is cultivated with the risk of the whole extent failing. When there is the danger of crop failure in spite of such restriction, arrangements may be made for raising water into the sluices and for the digging of temporary subsidiary wells and lifting water therefrom and saving the crop. Thirdly, in the channel-fed areas, where fields lie on a slope and water has to be perpetually flowing so as to satisfy everyone's rights, it becomes impossible to grow anything other than rice; if the whole area is farmed as one unit, this can be avoided and fields could be so cultivated that a variety of valuable crops can be grown under conditions best suited to each. The difficulty for arranging for adequate drainage in fields under different ownership is almost insuperable, but will become possible under the co-operative ownership of a society. Lastly, the case for a large extent of land in one cultivable unit as in the case of a co-operative or collective

farm, or under individual ownership, really rests upon the economies which can be secured by the use of labour-saving machinery, whether it be for ploughing and other kinds of tillage or for other purposes like sowing, manure spreading, spraying or dusting to control pests, harvesting, threshing and so on or for the pumping of water for irrigation. The great benefit accruing from the adoption of such co-operative or collective methods has been blazoned forth almost like a propaganda campaign by accounts of what has been achieved in Soviet Russia, and it may be useful to briefly describe the Russian models. As however, co-operative farming of one kind or another has been developed elsewhere also reference to these may be of interest. Thus:—

Foreign models of co-operative farming societies: (1) *U.S.A.* —In the U.S.A. as a measure of rehabilitating impoverished farmers and of landless working classes in other walks of life, especially after the depression of 1930, and as part of a scheme of land settlement, co-operative colonies for joint farming were established by Government agency. Land was parcelled out and assigned, farmsteads built for each, roads were laid, water supply provided, schools, co-operative stores, community halls and offices built and necessary funds advanced to the colonists for farming purposes. Tractors and tractor drawn implements were owned by the settlement. The settlement was a co-operative colony, each member being however being independent, but under obligation only to make use of the common facilities provided and to purchase and sell only through the society, and to follow the advice at every step in the cultivation, for which Government experts were also deputed; the advice, it may be added, related not merely to farming, the crops to grow, the rotation to follow, the seeds and manures to be used, etc., but to many aspects of communal life in the settlement. The essence of the project is the large measure of independence of the settlers although co-operative, the employment and initiative of Government agency and above all ample financial help from Government. As the parcel of

land assigned to each settler was sufficiently large as is the practice in that country, problems like the pooling of land, extinction of boundaries and so on do not arise.

(2) *Palestine.*—In the newly created State of Palestine, the Jewish immigrant settlers have adopted a scheme of co-operative farming somewhat on the following lines:—The farms are either cultivated collectively, by individual families who work jointly on the farm, such farms being large enough for the purpose, or they are farmed by individual occupiers who while cultivating their holdings as separate individual farmers, co-operate as members of the colony in using the machines, etc., provided, purchasing from the society and selling through it. In addition to these two types is the one in which the members co-operate not only in farming but in living as one family, sharing the household duties, with a common kitchen, dormitories, etc., all being treated alike in respect of food, raiment, and other necessaries, and no one looking for any special reward in proportion to effort or utility. This attitude of self-denial is almost religious in character and is cheerfully borne as this persecuted race feels it has reached a safe haven at last; such co-operative life cannot of course be thought of in any scheme of general application.

(3) *Mexico.*—Co-operative farms of a somewhat similar type have been attempted and worked in Mexico, as part of the land reform measures which aim to secure to the landless peasant labourers and tenant farmers cultivable land of their own. Land was assigned in co-operative settlements comprising such farms, which were intended to be cultivated as one collective farm, or as individual units with a somewhat limited sphere of co-operation. In either case the land remained the common property of the settlement. In the former case when the land was cultivated collectively, the type approximated to the regular collective farms of Russia, all the means of production being provided by the society, the members being paid wages according to the quality and quantity of their work and profits finally in proportion to the wages earned.

(4) *Soviet Russia.*—Coming now to the Russian models themselves, these comprise more than one type, as noted below:—

(*a*) The early kolkhozes (co-operative farms) took the form of simple co-operative societies (called 'toz') for the joint acquisition and use of complex machines, multiple metal ploughs, reaping machine, etc. Land remained the property of the individual owners who were 'toz' members and the output of each parcel belonged to the owner. They were called societies for joint land cultivation.

(*b*) Another type was the 'Artel'. In this, the land, heavy tools, and machines, farm buildings, and work animals were held in common. Individual land holdings were lumped together, subdivided into fields according to crops and worked collectively. The total output was divided among the members according to their labour, or shares or the number of consumers.

(*c*) There were also the agricultural communes which organised collectively not only for production but also for consumption, members living in common houses, with common kitchens and so forth as already described.

(*d*) Lastly came the full-fledged kolkhozes or collective farms of the present day, the older models having been scrapped as not conducive to maximum production, these being the types of which rosy descriptions appear and which are being held up as models worth copying.

In these farms, the co-operation comprises every item of farming, but the main feature is that the land belongs to the society, having been taken over from the individual members who have completely surrendered their ownership rights either voluntarily, or by compulsion usually camouflaged as voluntary. The land is completely rearranged for economic farming and mechanisation, and the crops to grow, the varieties thereof, the area on which each is to be grown, the manures to be used, and their dosage, the technique of cultivation, are all decided by the committee aided by experts; mechanisation is as complete as possible, tractor ploughs,

harrows, seed drills, hoes, manure spreaders, harvesters, and threshers, being used to the fullest extent. Land of suitable kind and area is set apart for grazing and fodder crops, for orchards, and for woodland, each to be managed in the most efficient manner. Members are allotted work in parties and on the various tasks under expert guidance and are well supervised. The produce is finally apportioned after all the expenses, including remuneration to the expert staff and Government shares are paid. The members receive wages according to the hours worked and the kind of work done and at the end of the year a share of the produce in proportion to the wages earned. They have however their own houses to which is attached about ¼ to ½ acre of land on which they can work in their spare time, raising vegetables, fruits and keeping a cow, a few fowls and sheep, etc. They also share in the management, because all matters are settled at the general assembly meetings or at the committees on which they have representatives. To this extent they have therefore an individuality of their own.

Still another type is the large State farm, on which the men work as they would in a factory, being mere wage-earners with no voice in the management. The management in all its details is decided by the Government experts in charge, with an eye solely to the efficiency of the farm in raising the kind of crops and in the quantities that may be required and decided upon in the interests of the State. They are however looked after well, provided with a house and kitchen garden, or housed in barracks and liable even to be shifted from one farm to another.

It should be added that the value of these farms is assessed variously, more or less according to the predilections of the reporters, some holding them up as models of excellence and others condemning them as modified forms of slavery. Thus here is one description: "In the first world war (1914–17) Russia had practically no tractors and only 412 million iron and steel ploughs. The soil was turned mainly by 17·7 million wooden harrows and 10 million

wooden ploughs. By 1940, Russia claimed to have the greatest mechanised farm system in the world, with 523,000 tractors in use and 182,000 harvester combines. More than 18 million peasant families lived in collective farms and 99 per cent. of all the products of the soil came from collectives or State farms. Russia had under cultivation the world's largest acreage and ranked first in seven basic products. The production of grain had doubled and cotton was up four times, since Tsarist days.

At what cost in human anguish all this advance had been achieved, this writer cannot begin to compute here. The levy of life and liberty on the ruined classes was certainly extremely heavy, in the years when the Bolsheviks broke the spirit of the individualistic peasant and bent him into the collective pattern" (Edgar Snow in *Glory and Bondage*).

Again "The Government accomplished this task (compulsory collectivisation) by ruthless coercion. Relying on the poorest strata in the village; the landless, the horseless, the chronically starved; utilising their hatred of the village rich and their longing for a better life; applying all forms of administrative and economic pressure—it succeeded in its task" (*Management in Russian Industry and Agriculture*, by Bienstock, Schwarz and Yugow).

Types suitable for India.—As far as India is concerned under present conditions and perhaps for a long time to come, it has been deemed that any scheme for co-operative farming should aim not merely or solely at the maximum efficiency of production which is secured by the collective farms of Russia, whether the kolkhoz or the State owned, but afford scope for individual effort and initiative which can be secured by the sense of ownership, or "the magic of property" which can work marvels. They should in fact be of a composite pattern which should take note of what is practicable without losing sight of the possibilities of other types. It is recommended accordingly that co-operative farming societies may be of the following types:—

1. Co-operative Better Farming Society.
2. Co-operative Joint Farming Society.
3. Co-operative Tenant Farming Society.
4. Co-operative Collective Farming Society.

The Better Farming Society.—In the Better Farming Societies, the members undertake to carry out certain particular methods in farming such as we have described under definite heads already. They are under obligation only in respect of these but otherwise are free to farm as they please and their ownership rights or the layout of their fields are not affected at all. These societies afford the easiest means for the introduction of many improvements in agriculture, for which the Agricultural Departments are conducting both research and propaganda. They can include many or practically all items in the list of such improved practices and become the most useful agencies in their extension. The list of lines in which they will co-operate under the rules of the society may include the following specifically in addition to those described already:—Use of improved ploughs, cultivators, improved sugarcane mills, threshing rollers, chaff cutters, conserving cattle manure by the construction of improved cattle stalls and manure pits, compost making, growing green manure crops, raising groves of green manure trees, the using of oilcake manure and concentrated chemical manures, the treatment of seed against diseases like jola against smut, and paddy against foot rot, the growing of new crops or new varieties recommended by the department, economic transplanting of paddy, selection of seed prior to sowing, and of earheads in the field, use of insecticides and fungicides when pests or diseases appear, improved furnaces for jaggery boiling, and better methods of jaggery making, the growing of fodder crops, the use of oil cakes, cotton seed, etc., as cattle feed where it is not usual, the maintenance of the use of a good breeding bull which may be kept by the society, the keeping of good breeds of poultry, the improvement of grazing grounds, the digging of subsidiary wells, arranging for drainage ditches and outlets on

wet land and even the consolidation of fields to the extent possible, the encouragement of cottage or subsidiary industries like spinning, basket making, food products like dried vegetables, pickles, *appalams*, etc. Besides helping themselves they will be the most powerful allies of the agricultural and allied departments, from whom they can receive the fullest measure of assistance in every possible way. Many other lines of work may be suggested, suited to particular tracts and crops but the above list may be found applicable over a large area.

In the remaining three types of societies, some degree of curtailment of freedom in the use or the ownership of the land forms the differentiating feature and for this reason they may be said to belong to the class of co-operative or joint farming societies proper.

(2) *The Joint Farming Society.*—In the Joint Farming Society the members, generally with holdings too small and scattered agree to pool them together and cultivate them jointly according to methods agreed upon under the advice of an experienced manager member or an agricultural officer. The ownership of the individual holdings is not affected, in fact if the fields are large enough even the dividing bunds may be retained; but in general these will have to be removed to the extent necessary and only the corner-stones or the permanent marks (or survey *bands*, as they are called in Mysore) being retained, from which at any future time with the help of the survey plan of the village the metes and bounds may be easily restored if so desired. The ownership is also recognised when the year's produce is disposed of, and a dividend is paid in proportion to the extent of the member's land. Besides joint cultivation, seeds, manures and other requirements are purchased jointly, appliances of any larger kind are also bought and used jointly, and land improvement where necessary is carried out from loans taken jointly by the society irrespective of whose land it may be. The operations are carried out jointly and members receive wages for daily labour. The produce is sold jointly

and out of the sale proceeds cultivation expenses and manager's salary, and payment for the use of the land are deducted, payments towards interest on loans, if any, made, a reserve fund is set apart and the net income shared in proportion to the wages earned by the members.

Thus while the bulk of the income accrues to the actual cultivating members both as wages and later on as a share in the profits in proportion to the wages earned, the absentee landlord and the non-cultivating owner also get a return in the shape of a dividend for the use of the land which is in proportion to the value of their land recognised as their share capital.

The success of these societies will depend not only on the higher net returns obtained as the result of the new methods but also upon the extent to which new openings such as industries, whether cottage or factory, are made available for the labour set free from the land. Provision for such openings will have to be made as part of the organisation of these societies. It is in fact a kind of reverse process to the scheme of providing 'allotments' or small pieces of land usually adjoining their houses to men who work in factories, so that they may have some congenial and profitable spare time occupation to enhance their earnings.

(3) *The Tenant Farming Society.*—In the case of the Tenant Farming Society, the society takes up land, either obtaining it outright or on lease from Government, the land usually being virgin land to be brought under cultivation, and on which Government wish to settle landless cultivators. The society parcels out the land in convenient self-contained blocks of suitable area among the members, who have to pay a fixed rent annually to the society much in the manner of a superior landlord. The society provides as many common requirements as may be practicable and appropriate, especially seeds and manures and also arranges for the sale jointly of the produce. The members are free to cultivate their land in their own way, although it is expected that they will be such as are recommended by the Agricultural

Department; they use their own bullocks and ploughs and implements, but they can obtain loans for purchasing these and for the expenses of cultivating, the latter loan to be repaid out of the produce at the end of the year and the former in convenient instalments. The profits of the cultivation after all expenses are met are divided among the members in proportion to the rent paid by each, which will vary of course with the extent and quality of the land. This kind of farming presupposes that each member is assigned land of sufficient extent for a moderately decent living standard and not just for mere subsistence or even a lower level, and in the division of the land this purpose is kept in view. Moreover the reclamation of the virgin land and rendering it fit for cultivation, the provision of roads, wells and even houses and other conveniences will mean a very large investment of money quite beyond the resources and capacity of settlers. This expenditure is being met by Governments concerned as an outright grant, in nearly all cases. Settlers cannot be attracted unless they are given more or less ready-made farms; it may be sometimes hard to retain them even when these are provided. Even landless labourers will often prefer to put up with their poverty, hunger and distress in their own neighbourhood rather than migrate to far off new settlements of this type, despite the chances of bettering their condition. All these features of rural life will have to be taken into consideration in starting such colonies. (See also leaflets on " Co-operative Farming Societies ", by the Bombay Department of Co-operation.)

Size of holdings.—The size of individual farms or parcels in any scheme of joint farming is a somewhat much discussed aspect of this question, and a brief reference to it may be useful. Agrarian reform in practically every country in the world has proceeded along the lines of splitting up the large estates or domains owned by feudal lords, the aristocracy, the church and monasteries and handing small parcels over to the ownership of the peasants, thereby

raising their status and increasing their income. The process however goes farther and farther at every upheaval of rural discontent, and an epoch generally follows when the desirability of creating small holdings is questioned, because these small farmers are seldom able to command the capital necessary for efficient farming and the holdings are liable to pass into the hands of the larger owners if not artificially prevented. The splitting up has had the result of lowering production without improving the lot of the peasantry in the manner intended. It may be noted that even in Russia the first measures of land reform consisted in the creation of small individual holdings out of the large estates taken over for such splitting up. It was found however that the total national output of produce suffered seriously and that the small farms were helpless against poor harvests or crop failures, which only increased the tendency for them to pass into the hands of the larger holders.

It is however fair to mention in this connection that in other countries it has been found that large-scale methods do not necessarily lead to a higher output per acre as against small farms, assisted by co-operative better farming methods. Thus in England the value of the production per acre on the different sizes of farms was as below:—

1– 50 acres	..	..	£ 11–19–9
50–100 acres	..	..	9–19–2
100–150 acres	..	..	7–19–1

In Switzerland the gross outturn per acre varied inversely with the size of the holding while the net income per acre varied directly with the size. The same was found to be the case in Denmark, so that the small farms are evidently cultivated more intensively involving greater expense, which results in a higher gross return but a smaller net return (*Economics of Agriculture*, by A. P. Van der Post, quoted by the Congress Agrarian Reforms Committee). Farms may indeed become too small to maintain an ordinary family in at least moderate comfort, and it may become necessary to create holdings of a larger size. It will be very

difficult to judge what the minimum extent of holdings should be. The standard of comfort and the requirements of families are subject to changes nearly always on the increase and what may be quite a satisfactory extent at one time may become too small and families will have to own a larger farm or seek other sources of income. Depending upon the prices of agricultural produce, upon the competition for land and the scope for profitable employment in industries, the size of holdings vary from time to time, now swinging to one side and now to another. The weight of opinion may on the whole be said to lie in favour of moderate sized individual holdings, to which the benefits of large holdings should be secured through the help of co-operation in many aspects of the farming business at least if not all along the line. The exact extent will naturally have to vary with local conditions of agriculture or systems of farming, or the kinds of products raised whether grains, vegetables and fruits or milk, and in any case be more or less arbitrary and tentative; this will account for the different areas suggested for what are called 'economic' holdings by agrarian reformers in many parts of India.

Basic, Economic and Maximum Holdings

It may be useful to refer in some detail to the new terms being used in this context to describe holdings according to the recent conceptions regarding the equitable distribution of land as a form of property, which are slowly taking practical shape in this country.

1. *The Basic holding.*—By this term is to be understood a holding of such a size that it may be construed as the irreducible minimum, a holding in which the return to the cultivator and his family will just meet the cost of cultivation, in which a fair wage for their labour will be included. No holding can be split up or reduced by fragmentation below this limit.

2. *The Economic holding.*—While the basic holdings are too small and have only to be tolerated as an unavoidable

evil and until such time as it may be possible to dispense with them altogether, they are by no means to be construed as a fair or equitable holding in the distribution and should be replaced eventually by 'economic holdings,' by increasing the area appropriately. The economic holding as already explained, is one which will yield enough to keep the cultivator and his family in moderate comfort at a fairly decent level or standard, besides keeping them fully engaged throughout the year; but ideas regarding standards of comfort admittedly vary according to people's notions and level of upbringing; even at any particular period standards vary widely, not to speak of the changes inevitable with the progress of time. Apart from this consideration in practice there are two ways of assessing an economic holding, *viz.*, one which will fix a definite money return from the holding which will ensure this standard of comfort, such as Rs. 100 or Rs. 200 or any other sum, per month, and the other which will define it in terms of a particular area of land, say 10, 20 or 50 acres, with variations to suit the form of cultivation like wet, dry or garden, the types of soil and other factors. The point to note however is the great difficulty of fixing the extent of such holdings and the need in any case for varying it according to conditions—a point of view which we have already stressed more than once.

3. *The Ceiling or Maximum holding.*—The conception of this type of holding is based not upon the extent of land which a man can farm profitably, with the use of machinery if need be, but upon the consideration that land as a form of property is a national asset which should be equitably distributed and that no man should possess too large a share while others do not have enough. It also emphasises that the land should be in the hands of those who actually cultivate it, and should therefore be limited in extent to such areas as can be so cultivated by the owner. It is a moot point if these conceptions can be applied logically to other forms of property or pursuits, like commerce and industry including even intellectual assets, and if so how such a divi-

sion can be made in practice; but land as a productive asset may perhaps be regarded as peculiar and *sui generis*, and it may not be impossible to establish such a distinction. It is needless to concern ourselves here with such a controversy, but we have to note that it is only in the case of land that the need for fixing a ceiling for individual ownership is being seriously considered.

Just as in the case of the basic holding and the economic holding it is very difficult to fix what the extent of a maximum holding should be, except in an arbitrary manner. Some would define it in terms of money income and others in terms of the area. In practice one way would be to link it up with the extent which may be fixed for an economic holding and fix it as a multiple thereof, say five, ten or more times, or more or less. It is rather interesting to note that in Madras the extent is defined by the Land Reform Committee in terms of the land assessment which makes the matter somewhat simple in practice and which has the merit of taking note of the area of the land and of the money income therefrom, inasmuch as the assessment is based on the return from the land, which in its turn is based upon all the factors like soil, kind of farming, etc., together with the area thereof. The amount recommended by the Committee is Rs. 250 which of course is also arbitrary in spite of its simplicity and practical convenience. It is necessary to add the caution that all these different kinds of holdings will fall far short of the expectations implied in their definition, as long as the holdings are not self-contained farms but merely aggregates of fields scattered in different parts of the villages. [For a further discussion of the subject, *vide Report of the Agrarian Reforms Committee, Hyderabad (Deccan)*, 1949.]

Some Indian attempts and their experience.—It must be noted that the whole movement is only just begun and as experience is gained many changes may become necessary. As a matter of fact, the Congress Agrarian Committee inspected some of the large ventures, started under the best

auspices like the Darauna, the Nanwara and the Ganga Khadar in the U.P., and the Missamari in Assam, but were more impressed with the imperfections than with the benefits accrued, showing that much time will have to elapse before the difficulties can be overcome and their usefulness realised in practice. A detailed account of this inspection by the Committee will be found on pages 65 to 75 of its Report.

Societies in other States.—In the Mysore State for example, co-operative farming societies are proposed to be started in each district and four have been recently sanctioned and have begun to function. The necessary extent of land has been granted by the Government at the rate of two acres of wet land and four to ten acres of dry land per family, and many of the other facilities already referred to are also being furnished, such as house sites, building materials, carts, bullocks and implements, seeds and manures, in addition to a money advance for subsistence and for buying cattle feed. Land has also been broken up by tractor ploughs, so as to obviate the serious initial difficulty where virgin land has to be opened for cultivation. Each colony is for forty families, and these are selected from agriculturists who do not possess any land of their own and who would be glad therefore to migrate and settle on these co-operative farms. Government has also sanctioned for each society a sum of money varying from Rs. 25,000 up to Rs. 37,572 as a maximum.

In the Bombay State also many societies have been formed, which fall into one or other of the above classes of co-operative farming societies. Government has sanctioned very liberal help, in the shape of outright grants, loans either interest-free or at very low rates of interest and recoverable in easy instalments, in addition to subsidies of various sorts. Many of the societies are in the initial stages, not having been fully equipped with necessary machinery and have not commenced full-scale working. The large ventures in the shape of reclamation settlements intended principally for refugees or displaced families started in Uttar Pradesh and

in Assam have already been referred to. Though they have been laid out at great cost and generally on excellent lines and have begun to function, many imperfections in their working have come to light, as stated already, which will have to be remedied.

It is very noteworthy that in nearly every State, notably Madras, similar action is being taken and despite difficulties of many kinds and the novelty of the idea, societies are being started with great energy and hopefulness, their most important and conspicuous feature being the very liberal financial help rendered by Government.

Some conditions necessary for their success.—It may not be out of place in this connection to invite attention to some of the conditions which may be necessary for the successful working of such societies, although it is obviously too early to draw conclusions from their actual working. In broad outline at least the following may be indicated:—

1. All the societies being sponsored, liberally financed, assisted with technical help and other concessions, and supervised by Government, its guiding hand, financial help and supervision, will have to continue for many years to come. Pioneer attempts in Mysore in the formation of agricultural colonies have been many and the history of their troubles and vicissitudes strongly emphasises the need for such continued financial and other help on the part of Government.

2. By the same token, their number cannot be increased to an extent that may be necessary to materially affect any large section of the country. We have referred to the provision of Rs. 25,000 as a minimum for each society in Mysore and the substantial money help in Bombay and Madras for the societies in those States. It will obviously be too heavy a burden, if societies could be started only on this basis.

3. Disruptive tendencies or at least the spirit of individual effort and independent action as against a surrender of the same to the needs of joint action are very hard to

overcome, and will have to be guarded against vigilantly and by timely action, for many years to come. It is significant that one of the suggestions made with regard to the Mysore societies is that the land assigned to members on lease should become their absolute property, after a period of 12 years, showing how strong the feeling of individual ownership is considered to be. (*Report of the Mysore Seminar on Co-operation*, p. 22.)

4. Nothing can contribute more to the spread of the movement than a demonstration that such societies result in larger returns to the members than if they worked singly, and a concentration of effort on a few societies with this end in view will therefore be of incalculable value. It is interesting to note that even in Soviet Russia, where Government makes no bones about compulsion, such a demonstration was resorted to, which proved a remarkable success. Thus, in the earlier years of collective farming, the first collective farm near Odessa was so successful, securing very high yields of crops despite a bad season when individual farmers in the same tract realised only poor crops, that Marshal Stalin arranged for a free excursion of 2,000 farmers from other parts of the country to visit this farm and judge for themselves, about the advantages of collective and mechanised farming methods. (Quoted by Fairfield Osborn in *Our Plundered Planet*, p. 133.) If in Russia such a demonstration was deemed desirable, its value in India must be considered many times greater.

CHAPTER XIV

THE MULTI-PURPOSE CO-OPERATIVE SOCIETIES

Advantages of Multi-Purpose Societies.—Although we have been dealing in these pages more with the scope for co-operative work in the improvement of agriculture with reference to rural development than with the details or mechanics of the organisation of societies of any particular type which should be the agency, still it is necessary to make some reference to the type called multi-purpose society, in view of its rapidly growing importance as the agency for carrying out the work. As the name implies, this type of society is organised for more than one purpose, if not all, for which co-operative societies are deemed desirable and are formed. Instead of separate societies for credit, for stores and sale of consumer goods, for the purchase and sale of produce, for the various agricultural operations described and so on, the idea underlying this type is to have only one society which combines all these functions. At least one reason for such a step is that a single line of work, such as credit, will still leave the ryot at the mercy of the ordinary money-lender, because the latter is both his banker and the merchant from whom he buys stores and to whom he sells his produce, and that unless the society can take up these lines of business also or to substitute itself, so to speak, for this banker *cum* trader, the ryot cannot be weaned away from the latter. On the other hand it is even conceivable that the trader-banker may make it harder for his client to obtain credit or to buy and sell reasonably if he did only part of his business with him and transferred the other part to a society. From a larger point of view also it is deemed desirable that a single co-operative society in any locality should be the centre and the nave to which all the ameliorative activities comprising rural uplift in general, fit for being carried out through co-operative agency should be intimately

connected, so that the agriculturist can look to one single organisation for credit, trade facilities, and other forms of assistance and that the society itself can more effectively use its influence in all fields of his well-being, like education, sanitation, the inculcation of thrift and so on, to the advantage of the whole village or tract it may serve. The society will certainly become a more active organisation by such a combination of functions because at present credit alone affords little scope for full-time every day business and such enforced idleness makes these societies more or less lifeless institutions. That many moribund or languishing credit societies have been quickened into life and enabled to do quite a respectable volume of business, after they took up the additional function of dealing in cloth, coffee, kerosene, etc., and became ration shops as well for the supply of food-grains, sugar and so forth during recent years affords ample proof that such a combination of functions helps to improve the condition of all these societies.

Moreover if the idea of one separate society for each line of activity is carried to its logical conclusion, " then there must be as many societies in each place as the problems which give rise to the deficit budget, each endeavouring to do one particular service to the peasant to enable him to save expenditure or increase income " and further " that the agriculturist cannot be induced to join a number of organisations and that all aspects of his economic life should be dealt with by the same agency " (*Bulletin No. 1 of the Reserve Bank of India*). Many other authoritative pronouncements are also strongly in favour of the multi-purpose as against the single purpose society such as Famine Enquiry Commission, the Nanavati Commission on Agricultural Credit Organisation, the Madras Committee on Co-operation and the Congress Agrarian Reforms Committee. The last is indeed very emphatic and says " each village should have a multi-purpose society of which the individual farmers as well as co-operative joint farms should be members," " a multi-purpose society will tackle credit, better farming,

marketing of agricultural produce, cattle welfare, organisation of suitable agro-industries and supply of consumers goods." "Their compass of activities would be so large that a whole village population could be included in its membership for one or other benefit accruing from it. The non-agricultural population should join it for the benefit of just distribution of consumer goods."

Arguments against.—On the other hand the Royal Commission on Agriculture was opposed to the idea of the multi-purpose societies on principle and mainly for reasons of practical difficulty. The 13th Conference of Registrars of Co-operative Societies of 1939, took a very cautious view and resolved that the Provinces should *experiment* (italics ours) with multi-purpose societies to ascertain more clearly the conditions under which they are likely to thrive.

The most serious difficulties which weigh against these societies are:

(1) The need for reconciling the 'unlimited' liability of rural credit societies, which is very necessary for the securing of adequate funds for the functioning of the society with the 'limited' liability on which basis alone, buying, selling and other spheres of co-operative work are possible. Supporters of the idea would however get over this difficulty "by converting all the societies into Limited Liability Societies, limiting the liability of members to the value of their shares or a multiple thereof, provided that a substantial part of the funds required by the society can be raised by share capital" (Nanavati Committee). This last proviso, it may be feared, may prove too difficult to achieve or guarantee, to make it possible to dispense with the Unlimited Liability. Still it cannot be regarded as an insuperable difficulty, because means can be found to command sufficient funds, on the Limited Liability basis itself, or in the alternative the credit or banking side of the society can be run as a separate part of the business and separate accounts kept therefor as is already done in societies carrying on both

banking and store business. It is interesting to note that the Royal Commission itself refers to this idea.

(2) The second difficulty is one of management and of competent personnel. " Where business activities are involved (*i.e.*, non-credit activities) business management is required, and it is not easy to find the capacity for this from amongst the members of societies. As a matter of principle, the single purpose society seems the best line of development. ' One thing at a time ' should be the policy" (*Royal Commission Report*). The matter of business management and an efficient personnel among rural folk, or for that matter even in many urban centres, is really too important to be ignored and the history of non-credit societies is not one of success everywhere and many instances can be found which will go to support the Commission's view. Due weight has therefore to be given to it. Nevertheless time is bringing in many changes and both education and economic progress are helping to make this less difficult, and in any case where such a great body of opinion among those most competent to speak is in favour of such societies, this should not be considered a great impediment.

At the same time it cannot be maintained that all kinds of co-operative activities without exception should be entrusted to one and the same society. For example, if a lift irrigation society should be started, it can concern only the very few holders who may possess land suitably situated for being served by the installation. To the large majority in the village, it can have no appeal. Similarly in the case of a sugarcane milling society, only a small number of people are sugarcane growers and these alone will be concerned. The same remark will apply with even greater force to many rural industries, which can concern only particular castes or families with whom such industry may be the ancestral or traditional occupation. It can be neither fair nor practicable to rope in everyone into such societies. After all, as the Royal Commission observes, there is something like an element of incompatibility in the activities

which can be taken up, and this probably accounts for the fact that many societies whose bye-laws allow them to add any line of non-credit activity to their credit business, have not thought it possible or prudent to combine any such. In any case what we would emphasise is that the starting of societies for such promising lines of work should not be conditional upon their being entrusted to multi-purpose societies. It should not be a case of either as part of a multi-purpose society or none at all. They are all too important and full of promise to be tied up or fettered in this way. They certainly deserve to be taken up by separate societies, wherever necessary.

Scope for Multi-purpose Societies: (1) *Purchase and Sale.*— The greatest scope for the multi-purpose societies lies in the combination of credit with purchase and sale of members' produce and the sale of consumers' goods, especially farming requirements. The progress made so far, and this makes certainly imposing reading only demonstrates this fact. The most notable progress is reported from the U.P. where over 2,000 such societies are working successfully. The entrusting of the sale of all controlled articles to these societies which is becoming common, will not only strengthen their present position but also pave the way for their becoming important selling organisations even after the controls are removed. In Madras as elsewhere many credit societies have become virtually multi-purpose societies, though not called as such, as they have taken up the additional function of selling these articles. In Mysore, it is reported that, 823 multi-purpose societies with a membership of 1,58,324 and a share capital of Rs. 26 lakhs were functioning at the end of April 1950, although the scheme was started only in the previous year, and that the sale of manure, improved implements, and iron bars, rods and sheets for agricultural purposes which used to be sold from the depots of the Agricultural Department have now been transferred to these societies.

It has been recommended moreover that "no individual peasant should be allowed to market his surplus individually

or through any other agency except the multi-purpose society." There is no doubt that the linking up of credit with marketing to which we have already made reference on p. 62 will be a very advantageous feature of these societies, and this is recommended both by the Co-operative Planning Committee and the Congress Agrarian Reforms Committee (*vide* p. 64 of the Report of the latter).

Another interesting way in which this combination of marketing and credit can be worked is that the sale proceeds of the ryot's produce sold through the society should be kept at his credit by the society to be drawn as and when required, to be adjusted against the cost of articles sold to him, and for paying small loans desired by him but should not be paid to him as a lump sum in cash. It is stated that the lump sum which a producer gets at the end of a year by the sale of his produce is a great temptation to injudicious spending and that this form of payment in kind and in small cash instalments will greatly promote both thrift and saving (*vide* G. P. Shukla, *Co-operative Rural Development in India*, pp. 34, 35).

(2) *Supply of Government requisites.*—The sales activity of these societies can likewise be greatly enlarged if Government Departments should purchase their requirements from these societies instead of from private merchants. Thus the Royal Commission writes, "It seems anomalous that while local Governments are attempting to build up an organisation for co-operative sale, Government Departments should purchase their requirements from other sources. If the rice, wheat and other commodities annually purchased for the Army or Jails were bought from co-operative sale societies the encouragement will be of great value, and there is no reason to believe that the commodity or its price would be less suitable."

(3) *Increasing credit facilities.*—Moreover the ordinary rural credit societies are not much resorted to, by the producers who should be greatly benefited by them, being either out of touch with them, or not having enough funds for

being advanced and/or being looked upon with suspicion by the class of men concerned. Many a man, for example, goes to the ordinary money-lender for the petty sums of Rs. 20 or Rs. 30 which he may require to buy the seed or manure for a cash crop like potatoes or sugarcane, and such people form quite a large number in many villages, although as a productive purpose this takes the first place and affords ideal scope for such a society. Similarly when a man wishing to buy produce in one *santhé* to sell in another at some profit, he borrows from a money-lender. In Mysore which is a great cattle breeding country, a common custom in the countryside is for ryots to buy animals for rearing, and sell them sometime later at a profit. Some specialise in buying calves just after weaning, others in buying one-year old ones and still others two-year old ones and others still older according to the facilities for grazing and for concentrated feeds like cotton seeds and their own financial resources. The buying and selling also take place in specialised well recognised markets, so that it is easy for these ryots to buy a bunch of calves or older animals, rear them for a season and sell them, usually at a good profit. The same applies though to a smaller extent in the case of sheep. Though this trade is very large and furnishes one of the best subsidiary sources of income to ryots, the financing is in the hands of the ordinary money-lender, though this should form an important and legitimate field for service by the rural societies. Special cattle breeding co-operative societies may be thought of for the purpose, but this particular subsidiary occupation is so widespread in Mysore that only an efficient rural credit society or better still a multi-purpose society will be found suitable and able to meet the requirements more fully. It may be possible to develop the credit section of multi-purpose societies to help producers in these fields, and with the greater touch which they are likely to establish with villagers, there will be great scope for beneficent activity. It is quite possible therefore that these societies can perform the functions of many diffe-

rent co-operative societies and will gradually become the effective agency in every village which will, as observed by Sir M. Nanavati, " enlist the co-operation of all elements in all measures—social, economic or administrative—intended for their development". What we wish to emphasise at the same time is that there should be no rigidity in applying this principle of only one society for all purposes and that wherever the need arises and the conditions demand it, separate single societies should also be both permitted and actively encouraged. It is mainly for this reason that we have dealt with this subject.

The example of Japan.—On p. 45 reference has been made to the multifarious activities which agricultural co-operative societies in Japan are permitted to engage in, much in the manner of the multi-purpose societies now proposed, which we have dealt with in this chapter. It may be useful to specify what these various lines of activity are, and what limitations are also imposed. Thus, " an agricultural co-operative society may engage in one or more of the following functions: (1) making loans for reasonable business and personal requirements; (2) receiving deposits; (3) purchasing for and selling to those eligible to use the facilities of the co-operative, commodities for family and business uses; (4) improving the efficiency of agricultural labour in the performance of farm operations and accomplishment of farming through co-operative organisation; (5) improving agricultural land and water facilities; (6) processing, transporting, storing and selling goods produced by members; (7) making available rural industrial facilities and engaging in rural industrial activities; (8) insuring property of its members against damage or loss; (9) making available those common services which will improve the living conditions and culture of the agricultural community; (10) conducting educational activities relative to co-operative associations and farming techniques; (11) accomplishing collective bargaining contracts on behalf of its members; and (12) incidental activities required to accomplish items

1 to 11." It is interesting to note that a limitation is imposed in combining banking with other activities. Thus, "A federation of co-operative societies may engage in any of the functions stated above, but if it engages in the making of loans and receiving of deposits, it cannot perform additional functions not connected with these activities," and again, "A co-operative association may organise as a capital stock or non-stock association; however, no non-stock association may carry on together the functions of making loans and receiving deposits." So truly wonderful have been the results achieved by agricultural and other co-operative societies in Japan, that the details of their organisation and function deserve to be carefully studied, so that they can be copied in India, with such modification as may be necessary (*vide* page 203, *Cottage Industries and Agriculture in Japan*, by Chaman Lal, 1949).

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